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"Salvation of India lies in Cottages."

—MAHATMA GANDHI

THE PROBLEM OF UNEMPLOYMENT

IF the number of persons who register themselves in Employment Exchanges for jobs can be any indication of the state of unemployment in the country, the figures made known to us from time to time definitely point to the increasing volume of unemployment in the course of last 8 years. According to the live registers of the Employment Exchanges, the number of persons seeking jobs in March 1951 was 3.37 lakhs. This number increased to 5.22 lakhs by December 1953. The country was alarmed at the rising trend in the volume of unemployment and a great hue and cry was raised all arround to arrest it. The Government was forced to revise the outlay of the first Plan and raise it to Rs. 2356 crores from Rs. 2069 crores. Still by March 1956, the number of persons registering themselves in Employment Exchanges increased to 7.05 lakhs.

The Planning Commission took special note of the worsening situation and one of the objectives of the Second Plan was kept as provision of increased employment to the people. The Congress leaders also announced that they would wipe off unemployment from the country in the course of next ten years. Still the figures of Employment Exchanges seem to be going up all the while. The number of registrations in June 1957 was 7.8 lakhs which increased to 9.4 lakhs by January 1958 and by June 1958 the number crossed the limit of one million.

It may be argued that the number of Employment Exchanges in the country has also increased and there is greater consciousness among the people to register in them. Nevertheless, if one out of four unemployed persons registered previously and now one out of 3.5 persons registers, as is calculated by the authorities, the number of unemployed in the urban sector (including frictional unemployment) increased from 14 lakhs to 28 lakhs in the first plan period and has further increased to 35 lakhs in the second plan period. Inspite of our planning and various measures adopted by the Government, the number of unemployed is increasing with the growth in our population.

The economists say that there is a definite relation between employment and investment. None can refute it. The more the investment the more is the employment. But in underdeveloped countries the question of investment is a serious hurdle to overpass. Because of poverty and unsatisfied wants of the people, inspite of any increase in their income due to planning or otherwise, the capital formation is much below the requirements of the situation. The problem of foreign exchange that the country is facing today is a result of it.

It may be noted that although there is a close relation between investment and employment, there is a vast difference between investment and investment, which probably is escaping our attention. There can be large scale investment on projects of low employment potential replacing men by machine; and there can also be small investment on such projects which are pregnant with high employment potential and ensure quite good returns but not as spectacular as in the case of the former. We therefore seem to have fallen into the quagmire of the former by our temptation to take a quick leap and catch the so-called advanced countries of the west in material and outward progress. This has led to our craze for borrowing and a plea for foreign investment, the wisdom of which future alone will show. The country will be wiser if it takes a lesson from the British history in India and caution from falling into any trap which may endanger our liberty.

It is somewhat heartening that the attention of the Government is now being turned from major to minor and small projects. There is however a woeful lack of appreciation of the potency of decentralised small and village industries production which ruled supreme in the mind of the Father of the Nation, but which receive only a step-motherly treatment from others and particularly the west fascinated economists and planners. It is not, therefore, very surprising to hear that under the exigencies of the situation caused by financial stringency, the plan provision for small and village industries may be the first victim of lamentable cuts. What is really surprising is that we plan for greater employment and eradication of unemployment but result in greater unemployment.

Talks have already been initiated for the preparation of the third plan. The country would be called upon to make still greater sacrifices. No one would grudge it if our sacrifices bring us nearer our objectives. The objective of eradication of unemployment still stands unchallenged. Will the party in power which pledged itself to end unemployment in ten years, honour its pledge by its fulfilment ?

SOME THOUGHTS FOR UNDER-DEVELOPED ECONOMIES

By : MAHESH CHAND

PROF. KITAMURA of the Metropolitan University (Japan) ends a recent article on Economic Theory and Underdeveloped Countries (*vide* Commerce, 13.12.1958) by emphasizing Myrdal's thesis implying a call to give up the *laissez faire* and the equilibrium approach and to start afresh with a study of needs and problems. Both throw a challenge that the thesis be met but the challege is more to students who have drunk deep of western economics. Benefiting by this thought-provoking occasion we take the liberty to recall the lines—

> The Old Order changeth yielding place
> to new
> Lest one good custom should corrupt
> the world.

Laissez faire and free trade, marginal productivity theory and the like, which held the field for long in the world of

economic thinkers (if not in the interest of the countries of the world) tend to become—as they were bound to become one day—old orders necessitating a change. The need for a change is speeded up by the growing concern for economic stability and security—by the fear of uncertainty experienced by the westerners who own capital today. It may be-really, it is apt to be-coupled with a persistency of hope to succeed in securing the 'pound of flesh' in the shape of high interest and monopoly in the markets. The delay caused by these forces leads to a sense of exasperation on the part of the relatively poor.

Simultaneously, the growing capital-intensive centralised production technique, together with the ever increasing population in the advanced countries (demanding work or social-security payments), force the western countries to continue to produce goods to dump them into the sea or into other countries. These other countries may be blood-brothers of a few centuries standing or others strategically placed. The dumping or the transference may be with explicit or implicit strings—strings which are bound to be of losing importance in the face of an awakening democracy in the under-developed countries. However, that is an inkling of the forces coming up from within the advanced countries.

In the under-developed countries themselves there is a growing frustration and tiredness arising out of generations of manual work (called drudgery by some) and intensified by the impact of a science-based urban society and the power of democracy-armed masses, to whom all sorts of promises were widely made in the heat of political struggle. This leads to an emphasis by everybody on 'rights' rather than on 'duties' and to the attempt by everybody to get the most by doing as little as possible. The irony of the situation is increased by the rather natural endeavour by those in power (political or otherwise) to make hay while the sun shines. To many, increased application—hence, increased productivity on the part of workers—seems to demand the monetary-carrot and capital-intensive programmes.

Tired of manual drudgery men are likely to look out for capital goods—mechanical devices to secure physical rest within the family unit. What is therefore required is a horde of small mechanical devices made available at very low costs. But our political and economic leadars, who have seen the west solve their problems in a big way through large centralised and capitalised programmes, are apt to go in for similar methods for spectacular progress and for continued return by voters.

The situation is complicated by private enterprise (characterised by self-interest) which tries to educate and sway the consumers (and fleece them) by selling low-cost (not low price), low-quality (though in new shapes and of new chemical materials) goods. Since individuals, who grow up in an economy, wherein money tends to become the master and store of value, are likely to fall easy victims to the lure of money, private enterprise can aspire to purchase bureaucracy, nay even the government.

The need is therefore (i) of slowing down vehement sentiments to make good wild promises, (ii) of developing a cold-shoulder attitude towards the erstwhile political touts and (iii) of taking effective steps to set in motion fruit-bearing balls. The urgent need is to throw up from among the young, such leaders who would be living examples. And can the young, who shall face the aftermath of illdevised and wrong steps of the old-in-power, wait and suffer?

Kitamura and Myrdal seem to ask for substitutes for such western beliefs as are indicated below :—

(a) Private enterprise is better than public enterprise;

(b) Capital intensification is less important than organisation and technological efficiency;

(c) Economic (price) stability is better than inflation and deficit financing;

(d) Marginal productivity theory and the relative scarcity of capital (in under-developed countries) justifies the adoption of labour-intensive methods; and

(e) Productivity of capital (in the background of complex centralised methods of production) depends on the extent of already invested capital. Since such investment is low, productivity of extra (capital) investment cannot be as high as of extra (labour) investment.

Without hurrying to create substitutes, we would like to emphasize the limitation arising out of a lack of technical know-how and the possibility of fraud on the part of self-interested foreign private enterprise. We must also underline the danger of totalitarianism in the background of increasing population (hence, decreasing per capita goods and services) and decreasing efficiency of both administration and economic activity.

Leaders in power are free—they have the option—to feed fat their own interests and to leave in power their own kith and kin (and their own party-comrades) but they must realise two points. One, there is no guarantee that these kith and kin shall enjoy the offices for long in the face of changing political and social environments. Two, these gentlemen may have a very bad effect on the bureaucracy, which may develop the tendency to protect the weakest (and the most wicked) element within it against disciplinary action, thus leading to high-handed administration, disturbance of peace and a state which may not be tolerated any more by—if not the masses —(say) the disciplined-minded military. We do not feel that our leaders could be so blind as not to realise the seeds of such insecurity for the second or the third generation in their own families. We are of the mind that the trend of talks by the high command to those next in command and the ranks is already undergoing a change. Only this month Nehruji seems to have taken long minutes to stress "ethical attitude" in addition to science (technology) and economic policy though he still feels (and here we cannot agree) that *science* has ultimately to be met by *science* (and not by ethics, religion, prayer, non-violence etc.). Even so, the deterioration seems to be too fast to be caught up by the changing attitude.

We believe that at the moment there is a special role due to the teachers, right from the primary to the highest class. Not to talk of social status, they are also suffering economic privations and we firmly believe that the government should take a decision that the highest officer shall rise to respect the lowest-placed teacher, that a report by a teacher should be more than decisive to turn tables in a case. We know that rights should better be allowed to come of their own accord rather than by asking, but we are discussing reality here and not the ideals.

The other important point to which once again we would like to draw attention is to realise the need to educate the consumer objectively and influence him not so much by talks as by own example and to reduce the varieties of goods produced on the large scale basis. Standardisation should be practised in regard to large scale production while variety may be encouraged in respect of small scale and cottage production. All this means that we must give up the western assumption regarding consumers' sovereignty and immpossibility of changing consumers' preferences.

We realise that the progress of science cannot be halted and hence the use to which it can be put is beyond control apparently. If we some day find scientific invention, which with a flick, could blow up a whole planet, we could not be surprised if some mad man actually uses it one day. But man's own self-interest (if not rationality) is likely to be a strong check to such misuses of science as are becoming possible. We do not see how a man enjoying the products of good uses of science would need to control another man. If the mechanical giants would give man whatever he demands all the twenty-four hours of the day, he should not bother about the other man except for maintaining these giants or for the sheer joy of seeing the others wriggle in tortuous drudgery while he sits inactive and leads an indolent life. But the tortured will soon learn to combine and succeed one day to bring to naught such consumption.

These long period possibilities must be eye-openers to new democracies as well as old democracies. In a frenzy to industrialise soon and in a big way let our planning not lead to savings and privations not within the perseverence—capacity of the public, whose hopes are allowed to fly sky high through political promises. Investment in long period dubious projects with uncertain cost budgets is to be favoured only after a second thought. We have not given each housewife a flourmill (chakki) on roller bearing, nor a sewing machine, nor a kit bag. Of what avail is the extra money placed in the hands of the erstwhile unemployed if it does not enable them to bring a little more consumption goods (including durable consumption goods and service appliances such as named above for the housewives). Not even more food can be said to have been made available to the people.

A Deshmukh may ask for more savings: a Srimannarayan may plead for village panchayats, cooperatives and schools: while a Dasgupta may point to the dangers of the democracy of the middle class. Yet all would agree that there is less zeal, less plan-consciousness, more frustration and more growth of population. The cure does not lie in organising symposia and planning forums when the very life and methods of the planners, politicians and bureaucrats have a different effect on the public. People come to know or think of the plan perhaps because planning is becoming a nuisance beyond limit. No surprise if the rate of population growth has increased from 1.35% per annum to about 2% per annum.

Agriculture, cottage and small scale industries products and village planning with the discipline and peace of the military would appear to be the desirable goals for economic progress today. But would we rise to give these to ourselves through consumers' (and cooperative) education, teachers and Gandhian life (by the leaders) ! Would we realise (as perhaps Dr. Deshmukh does) that we must all rally together and act as one (all party) government so that whether it be the village or the centre, factions would be ruled out. An economist will perhaps find it out of bounds to make this suggestion but as an educationist one can surely underline this idea, for otherwise who lives if India dies.

THE PROBLEM OF AGRICULTURAL PRODUCTION IN INDIA

By: M. BALA SUBRAMANIAN

AGRICULTURAL production in India consists almost wholly of crop production. In countries like Denmark, Holland, U. K., a large part of their agricultural production is made up of dairy products. Meat and wool also do not figure much in Indian agricultural production, while they form a high production of the total agricultural produce in countries like Australia, Argentina and New Zealand. This leads me to refer to the distinguishing features of agricultural production in India.

The two outstanding features of agricultural production in India are the wide variety of crops and the preponderance of food over non-food crops. It is a paradox that India, with well about 80% of her teeming agricultural families actively engaged in the cultivation of the soil, with about 330 million acres of sown area, of which about 82% is under food crops and with one third of the world's cattle, has not been able to produce enough for the people to maintain nutritive standard. Though separate agricultural departments were organised in almost all the States of India, over sixty years ago, and they have made successful experiments and demonstrations, the results of their research have not, to any appreciable extent, been put into practical application by the cultivator with the result that agricultural production from land continues to be very poor as compared with advanced countries.

Some of the main factors responsible for the low production, apart from the traditional agricultural practice, are the smallness of agricultural holdings, soil erosion, ravages of diseases and pests, poor farm equipments, lack of finance and the systems of land tenures. Sooner these factors are properly tackled, the better and quicker will be the increase in agricultural production. As the smallness of agricultural holdings is the main obstacle in the way of improving the productivity of land, the adoption of co-operative farming—joint farming—by the farmers having small holdings, on the model of "Moshav Ovdium Type" of co-operative farms prevalent in Israel is imperative. Aided by expert knowledge and supervision, funds and management, provided by the Government, there is every chance not only of profitable farming but of developing and transforming undeveloped and underdeveloped small holdings throughout the country.

May I turn now to an aspect of a very important problem of agricultural production? That problem is the "Food Problem" which is primarily a "rice problem". The problem of food is as vast and varied as our country. Its dimensions can be guaged by the fact that a sum of more than 1150 crores of rupees i. e., more than half of what we spent on the First Plan, had to be spent during the decade between 1946–56. Add to this amount, what we spent on irrigation projects, grow more food campaigns, food subsidies, and then the vastness of the problem we are called upon to deal with, becomes very stupendous in proportion. In spite of all this expenditure, we are very much in the woods. In fact "Food bids fair to become the heel of Achilles" in our economic life and unless resolute measures are taken to protect this soft

under-belly of our economy, much of our Second Plan is likely to end in smoke.

The Food problem in India, is not only a quantitative problem of increasing the food requirements for our growing population but also a qualitative problem of increasing the supply of food so as to satisfy the nutritional requirements of a balanced diet for maintaining the physique of the masses in a state of efficiency, an administrative problem of devising ways and means of effective distribution of food free from transport bottlenecks, hoarding and inter-state restrictions and ultimately an economic problem of increasing the purchasing power of the people so as to enable them to ensure adequacy in quantity and in quality.

To put it in a nutshell, what we want to solve the knotty "Food Problem", are (1) fuller utilisation of irrigation facilities, (2) use of improved varieties of seeds of reliable quality, (3) proper and economical use of farmyard manure, green-manures, composts, chemical fertilisers etc., (4) control of insect pests and diseases which devastate crops, (5) use of improved agricultural implements known to the farming world, (6) rationalisation of agriculture and industrialisation at an increasing rate, (7) a scientific system of crop rotation, (8) a scheme of planning of population, (9) use of every available bit of land for growing food crops, (10) stabilization of agricultural prices and in particular the prices of foodgrains which constitute the largest element of agricultural production and (11) an efficient administrative machinery for the proper distribution of foodstuff. These are intented not as a temporary expedient to tide over a localised trouble but as an essential part of human behaviour in an ordered society, to overcome periodical national calamities whether they flow out of natural or artificial causes.

Next on the question whether country should import foodgrains or could produce more in the country itself, to solve the food problem, even though there is a difference of opinion among the economists of the day, it is very clear that to depend on the import of food grains at a time when the international situation is none too bright, will not be an act of wisdom at all and hence our country should be prepared psychologically to meet all contingencies through its own internal efforts for increasing and improving agricultural production at home. Further if we import fertiliser instead of food grains, it would be cheaper and would help us to increase production at home and thereby lighten our burden of foreign exchange problem. It would be still profitable and economical if we import only plants and set up more fertiliser factories, similar to Sindri factory, to produce more fertiliser at home.

Therefore to set up food production and to insulate India's food economy from the uncertain factor of weather, it is necessary that the Government should implement without any delay the following measures: (1) stabilization of agricultural prices, (2) fixation of irrigation rates on the basis of "net benefit", and not on the basis of the cost principle and concessional water rates in the first two years where rainfall is usually insufficient, (3) equal high priority to repair of existing minor irrigation as to the construction of new ones, (4) the number of seed stores in each block be increased to at least four, (5) chemical fertilisers to the value of Rs. 100 crores be imported, (6) more fertiliser factories to be set up to ease the strain on foreign exchange resources on account of fertiliser imports, and (7) land reforms should be backed up with a strong enforcing meachinery.

VILLAGE REORGANISATION-THE NEED OF THE HOUR

By : P. CHATTERJEE

Introduction

IN initiating the idea of 'planning from the bottom', the Planning Commission had been conscious of the need for reorganising the villages as a basic step for a real, integrated economic development of India to fit into the lofty ideal of planning in a democratic structure of Government. To make the ideal attainable and worthwhile certain fronts need be explored—fronts that offer themselves as a test of sincerity of the architects of planning —in gauging the adequacy of the emphasis to foster the determinants of planning in their cradle, to bring them within the grasp of those for whom planning is meant and to arouse the required degree of enthusiasm among the people in the villages.

The Second Five Year Plan in the third year of its tenure has left much of what was envisaged in the village sector unfulfilled. The stir created in the country has been much more in the form of sufferings and discontent, that have already begun eating into the vitals of many, than in the creation of an atmosphere that is conducive of bringing the sacrifices out of the people's own accord, which are indeed essential in this context. The alternative is embedded in the risk of making planning a "vehicle of imposition" on the people. The stresses given by the Planning Commission have not found requisite shape in the execution of them down the rungs of administration to the village level with the result that the planners and the people see it in different light which should be eliminated at the first instance. It is for all these reasons that reorganisation of Indian villages—its need and methods, should be considered in some detail.

Some Problems

It is a fact that in India too many farmers hang on to very inadequate stretches of land to sustain their living—the grave problems of subdivision and fragmentation have been added by the age-old techniques of a wooden plough and a pair of bullocks, both the driver and the driven, suffering from malnutrition of food and thought. The produce raised is much too little to enable him to look beyond his nose to the wonderful world that science has bestowed and for no fault of his own, he has been denied a legitimate share of progress that has been achieved by man.

In India, two centuries exist side by side —one, the thirteenth, lives in the major portion of the landmass that India is, in the villages, and the other, the towns and cities where the twentieth century has been in bloom. Of course, the former is interspersed by streamy glimpses of the present century manifest in the Railways steaming between wonderland to wonderland. But is that all that can be granted to them ? It is really a tragedy that the suppliers of food should die of starvation and some steps to cure the malady have already become overdue. Any genuine steps in this regard must necessarily be in the form of restoring balance among endeavours in industry and agriculture in terms of remuneration from effort and the general, mutual weal in the relation.

The efforts on land need be made, more or less, remunerative and in that, we must understand that this should not be sought in the transfer of surplus population to the towns from the villages to crowd the precincts of industries till

the latter sector is ready and is in a position to absorb such population. Under the conditions obtaining in India this is indeed a far cry ; for the industrial sector itself seems over-crowded, a fact which has not received proper attention though it is amply borne out by the fact that rationalisation in this country has invariably resulted in throwing a number of workers out of employment which means that our present structure of industrial employment cannot be maintained except at the cost of bidding modernisation adieu.

This situation suggests that blasting of the existing malaise is not an easy affair by all counts. The condition in the village-sector is much worse, in point of fact. The solution will, therefore, have to be devised without recourse to a transference of people from one sector to another.

The Way of Solution

The real solution, we are now in a position to visualise, lies in reorganising and rejuvenating the village sector in a way that enables it to face the industrial sector as an equal so that the relation between the two can become complementary to each other on the foundation of an idea of "give and take". This can best be brought about in a climate where the village-sector does not suffer from any frustration of the sense of economy that, we are constrained to pronounce, is eating into its vitals in the present conditions. The ills in the sector have not come in the course of a day and their cure will also have to be by doses. But, while conceding to this, we should also not fail to grasp that all our steps to blast the malaise have not been in the right direction on the face of all that has been said to the contrary.

We appreciate that to make the people plan-conscious publicity is essential but the paper-work portion of the publicity programme is almost useless for the village people; for, the wonderful world of the alphabets has eluded their grasp. The town-folk too are not happier either; for most of what the executives of planning say turns out to be contradictory to their experience. The peculiar situation in India, spelt in the occasional bottlenecks, has arisen mainly from the fact that the propaganda work adopted in the context mostly falls on deaf ears.

Our Government cannot escape the responsibility for negatively fostering the aversions of the people towards the plans through adoption of measures that catch the people unawares. This is indeed dangerous in a democracy because the people will always attempt to gauge the success of the party in power in terms of the volumes of nonfulfilment of promises rather than an assessment of what it really achieved. The cold attitude of the executives of the plans at various levels, particularly those in direct contact with the people, further aggravates the problem. Time is ripe it was appreciated that without an atmosphere of genuine enthusiasm much of the work claimed to have been done would be mere eyewash. The first signs are already there on the horizon.

A Danger Signal

Proper diffusion of purchasing power among the people has remained as yet only a cherished ideal. Government has done good in bringing the industrial giants of the country under control but the problem does not end there ; what we have been really leading to is the creation of a different class of princes on whom, in the name of planning, fortune has showered all her smiles. We do not envy them ; what we say is only that the problem of the giants has changed its face only rather than being solved. In the process, wastes of money have been

colossal which would have otherwise been employed more profitably. The net result has been that instead of planning from the bottom we have taken the surface as the key point of emphasis.

There is, we feel, a need for reconsideration of all the factors involved; more so when we think that ours is not a totalitarian Government to enable the marshalling up of all the forces simply by a direction from the top seat of Government at its will. Sadly enough, we have partially borrowed the elements of Communist plans in laying a more-than-proportionate stress on capital-intensive methods while the way of fulfilment of the same has been beyond our reach. Naturally, to find the curative we have to revitalise the village sector to give us the strength and capacity to withstand the sacrifices necessitated by the situation.

Village Reorganisation Methods

In considering the methods for the reorganisation of villages we would, first of all, have to be fully alive to the enormity of the problem and the relative extent of the villages vis-a-vis the urban sector of the vast landmass of India. We can have a glimpse if we analyse the situation statistically. The following figures quoted from "*India 1957*" will speak for themselves :

Year		% of Total Population			
		Rural		Urban	
1921	1941	88.7	86.1	11.2	13.9
1931	1951	87.9	82.7	12.1	17.3

Of the total population of 35·7 crores (per 1951 Census) only 6·2 crores or 17.3% live in cities and towns and 29·5 crores or 82.7% live in villages. The livelihood pattern of the Indian population can be spelt from the fact that 2490 lakh people live on agriculture, direct and indirect, while only 1076 lakh live on other occupations. In these circumstances improvement, however eulogised in grandiloquent terms, can hardly be real if it does not touch and alleviate the conditions of the village population and the one failure that has attended our efforts in planning is that we have not brought the plan home to the village people. It is perhaps a curse of our civilization that the progress that we have made has not been shared by all.

The anomaly can be corrected only by bringing in "organisation" at the village level and by arousing enthusiasm among the village people. Education of the village people has hardly received a deserved emphasis in the Second Five Year Plan. Be that as it may, in their daily toils the agriculturists must be infused with a sense of economy that helps not merely in pricing their produce but also in the direction towards the efforts that will land them in the best advantage. In this, the contribution of new implements towards a renovation of Indian agricultural outlook cannot be spoken of lightly. "The new implements are not always more effective than the old but they are lighter, require less labour of men and bullocks, and they do their work more rapidly. Economy of bullock power means that the large cultivator need not possess so many bullocks and so can better feed his milch cattle; and speed of work means that operations can be done just when necessary and when therefore they are most beneficial". (J. Russel: Report on the Work of Imperial Council of Agricultural Research, page 59: quoted by Prof. C. B. Mamoria in his Agricultural Problems of India).

Time is also ripe to make the cultivators fertilizer-conscious for better and greater yield and the irrigation projects instituted in India under the five-year-plans should open up a front neglected in this country for long. In the context of fertilizers, there is a hesitation still

ruling in the agricultural sector that fertilizers (chemical) eat up, in the long run, the advantages that they help reap. Perhaps this is a mistaken notion; for chemical fertilizers applied after proper tests as to the need of the soil may result in some permanent benefit (An article titled : Fertifizers Can't Harm the the Soil If You Know How To Use Them: by Shri P. C. Raheja of the Indian Agricultural Research Institute, New Delhi). Proper study of the Cost Behaviour in agricultural operations and grant of due protection in the pricing of the produce and the returns from the markets are indeed very long felt needs in this context. Research by way of a musician's etude will seldom do any real good in the present situation—what is more urgently needed is on-the-spot advice and a reassuring touch founded on the basis of intelligibility and understanding resulting from a contagious contact with the village people. Subsidiary occupations in cottage industries run on electric power, on broad-based co-operativisation of operations, will provide a much longed for elixirine.

Howsoever perfect our paper work may be, the application in the fields will surely demand further adjustments even if these are in the adverse direction vis-a-vis the academic findings. The reality of the malaise shall be appreciated if we consider that the farmers are much more interested in the simplicity of detail in an agricultural research than in the findings of a mathematical relationship among the factors involved in agriculture, particularly so when research is carried out as a sort of statistical post mortem. It is not conceded that academic research is unnecessary. What is emphasised is that the farmer, as he is in India, is hardly interested in that. On the other hand, definite directives may be given to the farmers to apply certain methods which experience shows to be more effective and to wear certain outlook as has been borne out by the findings in other areas to be more beneficial. Dependence on natural influences has not been on the wane in India even in the eighth year of economic planning which factor, alone, may make us sceptical about the genuineness of our achievements in the realm. The real tragedy is perhaps still in the quiver awaiting release when farmers may find water from the irrigation projects beyond their reach in view of the exorbitant cost that may be charged. Government subsidies to make the water available for the farmer is only a short term adjustment. The real solution will have to be found in enabling the farmer to bear the cost, through nurturing him to capacity and a better living standard.

In this connection a related front needs some comments. In India, the gap between the rated industrial capacity and the actual working is indeed a yawning one. The idle industrial capacity can be very successfully utilised in producing commodities for sale exclusively in villages at a cheaper rate than the usual market price. This can be possible by the application of "marginal costing" techniques. We have seen the efficiency of such a method when during the war "standard cloth" used to have been supplied to the village people at controlled rates. This cloth is mainly to substitute napkin as the wearing apparel among the village people. The margin of selection being very narrow, the farmer is often prevented from purchasing a dhoti for want of a very small sum of money, say, Re. 1 or 0.50 nP when he is prepared to pay Rs. 5 at best and nothing more. If he can procure a napkin from the village weaver at Rs. 4.50, he considers it a saving of Re. 0.50 over what he was prepared to pay i. e., Rs. 5.00. This front as yet has

not engaged our serious attention; we should try.

What the farmer considers an insurmountably difficult task is the question of marketing the agricultural produce and that at proper and legitimate price commensurate with the costs he has incurred in raising the produce—both monetary and otherwise. In most cases, an owner-farmer does not include his own labour in calculating cost but this should surely find a place in a conscientious calculation of the factors put in for raising the produce. In addition to this, the usually recognised forces of market—demand and supply—land the farmer into a disadvantage. The perishable commodities make him further subservient to extraneous forces to which he has to yield to save himself from incurring a total loss. An inert passivity has, therefore, established its sway on him. This eats into his vitals and leads him to a stagnation of outlook. This problem can be fully solved only on the co-operative lines.

It is indeed unfortunate that in India the co-operative methods have been facing an aversion among the people. This has been caused, inter alia, by a pollution of the co-operative ideal through the designs of ulterior interests whose fate is not bound in co-opèration. Naturally, these interests have worked their way up in a sort of regimentation of details. Government should exercise a strict vigil over the arena and the negative forces should be kept in check, if necessary, by punishments. A most desirable step in this connection would be to organise the system around a Central administration with regional offices in each State on similar lines as Joint Stock Companies. The States in administering the system have given rise to complications, one of which is a variety in methods and outlook.

Reorganisation at the village level cannot be a matter of days or months. To be thorough it must require a much longer period but the emergence of proper outlook must be there along with a movement in proper direction. The farmers will have to be attracted to it by its own merits. The rigours of reorganisation will not dishearten the farmers if they can be convinced that these are necessary to bring them a distant, but not beyond their reach, total and integrated betterment of their living conditions, working tools, knowledge, and social benefit.

STRUCTURAL DYNAMICS OF RURAL INDIA

By : ADAM KADMON

THE structural dynamics of our rural sector requires a brief study of social composition and its impact on the growth of social and economic forces. These forces show the comparative stability of the economic basis and of the caste society which persists in spite of the dynamics of the colonial period. It is the structural dynamics of rural India which by its direct and indirect operations affects and is affected by the socio-economic environment.

"It is commonly said that the hard core of unemployment in India is structural in character. All that this means is that the broad aim of planning must be to remove the structural defects of our economy which inhibit progress and to provide incentives which stimulate

structural changes favouring progress."[1]

The two variables of this analysis are the social organisation and "peasant" society.

Social Organisation

The self subsistence social hierarchical structure of rural India has always been a "non-competing cluster" for the urban civilization with the result that they never interfere with the political stratum. Even under the British Rule this characteristic of rural India had been dominant. Thus the peasant was never enlightened about the so-called "modern education." Ever since Macaulay's verdict in 1836 that "a single shelf of good European library was worth the whole native literature of India and Arabia",[2] the Western education has been practically monopolised by the upper bourgeoisie and did not penetrate into the caste hierarchy. The caste system, thus, came to represent a unique form of social organisation whereby the Indian society depicts a peculiar picture of unity in diversity. This social stratum of rural India can be classified in three distinct groups :

1. The emergence of a usurping supper class of the Brahmins the *raison-d'etre* of which was the orthodoxy of religion.

2. The growth of a multitude of distributing classes which had, *prima facie*, nothing to do with the existing production function but the *modus operandi* of which was the relative demand elasticity.

3. A class of serving caste and low caste such as *Antyaja* and *Mlechha*. From this class of artisan arose the petty proletarian class in the rural India.

The destructive role of the social order led to the deteriorations of the masses and the growth of a new regressive conception of life while in the economic sphere they were squeezed of their production relation and were scientifically led to pauperization.

"Peasant" Society

India's almost complete dependence on agriculture gave her the character of a "Village Continent" with the so-called Egalitarian social groups. This illusion of her egalitarianism and the myth of equality has been exploded by economists. The following table representing the inequality in income distribution and the presence of an income hierarchy in Managaon, a typical "ideal village" in the district of Hoshangabad, represents the income hierarchy.

Per-capita Income (in Rupees)	Number of Households	Percentage of total households.
0– 99	51	17
100–199	141	47
200–299	72	24
300–499	36	12
500 & above	–	–
Total	300	100

The operation of an economy is the total manifestation of the inter-relationship of the people. But the economic structure of production in India reveals a significant data that the ratio of men to women in India is much greater than many countries of the world. The General Wage Census of the Government of Bombay, 1934, gives the following figures for the cotton textile industry :

Ratio of men to women in	British India	85 : 15
Ratio of men to women in	Bombay Presidency.	84 : 16
Ratio of men to women in	U. S. A.	59 : 41
Ratio of men to women in	Great Britain	35 : 65
Ratio of men to women in	Japan	24 : 76

1. Dr. B. N. Ganguly–"Institutional Implications of Bolder Plan with Special Reference to China's Experience". (Vide The Panel of Economists on Second Five-Year Plan).

2. Quoted by Ramsay Muir in *The Making of British India.*

This ratio is even far more in rural India and thereby reveals a high degree of disguised unemployment. This results in the low living standard and, accelerated by the force of certain other bottlenecks, in a steep rise in the growth of population. It has been estimated that the increase in income per capita will fail to keep pace with the *pari passu* increase in demographic pressure.

(Estimated growth in population and national income projected upto 1975-76 in terms of Five Year Plans)

	1950-51	1955-56	1960-61	1965-66	1970-71	1975-76
Total Population (in millions)	361	384	409	434	465	500
Total working population (in millions)	144	153	163	173	185	199
Total Income (in crores of Rs.	9,190	10,800	13,480	17,260	21,680	27,270
Per capita income (in Rs.)	255	281	330	398	466	545

The institutional pattern of India, therefore, requires the following considerations :

"I. Problem of Increasing the Rate of Marketable Surplus.

"II. Measure to Utilise Idle or Under utilised Labour Power.

"III. Measure for Built in Flexibility.

"IV. A Positive Policy for Employment.

"V. Policy Towards Labour Welfare Measures."[1]

I have tried to analyse some of these problems in two back issues of "Rural India",[2] while the others do not fall within the scope here, except the problem of potential economic surplus[3] which, *ceteris paribus*, is the factor *sine qua non* for any economic development.

Dr. Rao analyses the whole problem in the context of increased investment and capital formation while according to Nurkse and Chiang Hsieh it is the pressure of disguised unemployment which is the *casus belli* of all evils. Mandlebaum[4] also puts it as follows :

"If these surplus workers were withdrawn from agriculture and absorbed into other occupations, farm output would not suffer, while the whole new output would be a net addition to the community's income. The economic case for industrialisation of densely populated backward countries rests upon this mass phenomenon of disguised rural unemployment."

"The Executioner Stands at the Door"

This vast rural sector with deep-down poverty is vulnerable to communism. Despite the marvels of democratic institutions, democracy in the newly emancipated regions of Asia and Africa has been substituted by the forces of dictatorship or is gradually in the process of being substituted by them. The potential pressure of these forces in rural India is not wholly invisible. Marx, perhaps, clearly visualised it when he wrote :

> "As the democrats join forces with peasant proprietors, so must the workers join forces with the rural proletariat."[5]

Engels also wrote that the proletarian victory is inevitable. The industrial rela-

1 Prof. C. N. Vakil and Shri Brahmananda—"Institutional Implications of a Bolder Plan" (vide Panel of Economists ON Second Five Year Plan.

2 "Rural India"—(Jan. & Feb., 1958) and "Rural India" (March 1958)

3 Vide "Economic Weekly", (Feb. 22, 1958)

Dr. V. K. R. Rao "Deficit Financing, Capital Formation and Price Behaviour in an under-developed Economy"

4 K. Mandelbaum—*The Industrialization of Backward Areas.*

5 Karl Marx—*Enthullungen uber den Kommunistenprozess in Koln.*

tions will bring urbanisation and this would be the seed of revolution.

Planned Structure

Planning in India has, therefore, to explore new methods and means as to keep pace with these structural dynamics of a nonmonetised economy. Taking a lofty flight of robust patriotism the Indian Prime Minister once remarked :

"What India is attempting to-day in regard to planning is unique in history. While countries of Western Europe had built up a magnificent civilization over a period of 200 years or so with the support, in some cases, of colonial possessions, and others like the Soviet Union had substantial achievements to their credit obtained at a tremendous cost, India is pursuing peaceful and democratic method to raise the living standard of her people".

The Indian population is increasing at the rate of 4.5 millions per annum and every year 1.8 millions of persons enter the labour force. The level of living on the other hand, is very low. Expenditure on consumption per person is about Rs. 22 per month of which about Rs. 13 is spent in cash and about Rs. 9 in the value of consumption of home-grown food and home made articles. These figures include those also whose propensity to consume is less and hence the condition of rural sector whose consumption propensity is almost lowest is even more miserable. The planning in India with all its autonomous "injections" and high inflationary potential has to nurse the income elasticity of demand, the degree of monetisation and the composition of consumption of the rural sector.

The planning in rural India, thus, involves :

1. The problem of democratic control.
2. Problem of flexibility and human control.
3. Problem of incentives.
4. Problem of priorities.
5. Problem of increased productivity and even distribution.

These problems can be solved by adopting favourable choice of technique suitable to rural India, by industrial method and plan layout, by production design and standardization and by production control. With the control over the development and use of scientific and technical resources, research and development facilities, engineering and technical services and advanced training in specialised fields, the exchange and dissemination of scientific and technical information and exhibits and demonstration projects, a matropolitan public authority can remove many of the socio-economic bottlenecks. Physical and fiscal planning in India is contrary to the conception of regimental totalitarianism. It is a rational veto. Poverty and pestilence can be overcome by physical planning as Spain was conquered by the Holy Inquisition.

"COOPERATIVE FARMING-NEED FOR RESEARCH"

By : A. N. RAJAMANI

CO-OPERATION has been recognised by the Planning Commission as the corner-stone for the success of India's Five Year Plans. It is aimed not only as a link between the public and the government(s), but also is conceived as forming the essential nucleus in the agricultural sector. As the need of the hour is increase in agricultural production, which is a necessity for the basis of sound industrial progress, co-operation is primarily correlated to the farming aspect of agriculture.

But the success of co-operative farming depends, *inter alia*, upon the sociological background against which it is set; for its working affects many social concepts—tradition, custom, caste, family structure etc—and effects changes therein. Hence, the response or resistance it evokes from or provokes among the people, very often conditions its success. If there is no resistance, it reflects itself in increased production.

In other words, the success of co-operative farming can be measured by the extent of progressive outlook it creates. It may be expressed in different ways: urge for progress, readiness to acquire knowledge in better techniques of production, the use of better seeds, fertilizers and the like, and in the forming of habits of doing everything by co-operative endeavour through appropriate agencies. The impact of co-operative farming will thus radiate itself in all activities of its members.

Generally the social benefits of co-operative farming are manifold. It developes greater intimacy of knowledge of one another among the participants. This is a *sine qua non* for development of farming because a great degree of intimacy paves the way for still greater association with mutual faith and confidence. The fear, that others will not co-operate with one, if one does not possess moral calibre and personality, based on honour and human fellowship, drives one to correct one's angularities. This results in the development of better social attitude, thus clearing the way for revival of village corporate life which has been shattered by foreign subjection. This is facilitated by the very nature of co-operative farming because it preserves the element of individuality (that is, one's right of ownership), and attachment to land is respected, unlike in collective farming. So the individuals concerned will foregather together without mental or psychological reservations.

For the same reason, stress is laid on the value and development of the right type of leadership. When the entire community, under proper guidance, begins to shake off its lethargy, the sheer bigness of the farming society serves as a potent force in changing public opinion in favour of re-valuing old values: viz. castewise allocation of functions is thoroughly modified and dignity of labour recongnised. It thus knits a strong social kinship.

Further, in view of greater intimacy and mutual trust, local distinctions and factions dissolve in the land merger; consequently, equality and equity are promoted. It ably assists, in this respect, the village panchayats with smooth administration and service before self. Besides, after the formation of the farming society, the incidents of crime and delinquency will be less as a result of higher level of income and closer contact- In short, the previous individual aloofness is now destroyed and replaced by oneness of outlook and purpose. All

members become the living limbs of the farming society.

If in actual working of the farming society, such theoretically beneficial effects operate, then, naturally the society will be an unqualified success. But it has not happened so in India. This is the reason why many delegations have been sent abroad in the recent past to study its working therein and report thereon, thus enabling us to profit by their experience to reorganize our co-operative farms suitably.

But the public opinion in India seems to be equally divided on the issue of its extensive introduction. Many of its advocates point out to its successful working in countries such as China, Poland, Russia and Yugoslavia. Others cite the example of Japan where peasant proprietorships function more creditably. But a point often ignored in these discussions is that co-operative farming in these countries is working in an altogether different political and economic set up from our own, and therefore, is not straight away applicable to conditions in India. Its prospects in India will have to be judged by different standards.

This involves a scientific study of its working, both the economical and sociological points of view. This is not to under-estimate the political significance of a network of co-operative farming societies in a country. The largest section of India's population is the agricultural class. Any political party's favour with this class is now conditioned or limited by the existence of innumerable peasant proprietorships. Hence, any political party can conveniently handle the small number of co-operative farms to perpetuate its power and authority. It all depends on the type of organization of a co-operative farming society, whether it is composed exclusively of landowners or of landowners and labourers or completely collectivised or nationalised.

Hence the need for a scientific and comprehensive study of the problem is evident. An attempt is made here to indicate the broad lines on which such a a study should be based.

There are three main important stages of the study, namely :

(1) Collection of basic data for co-operative and private farms;

(2) An analysis of the economies of scale and the computation of the production function of the input and output factors in both the farms, and

(3) Sociological implications.

Only a combined study on this basis will tell us of the true successfulness or otherwise of co-operative farms because the social aspect of dissolution of caste consciousness and fostering of community outlook is as much an important and expected consequence thereof as increase in the overall agricultural production.

The following Table shows the types of basic data needed :

Nature of Farm	Size of Holdings	
	Large	Small
Private	..	..
Cooperative	..	..

Each set of basic data will furnish particulars of the following aspects of farming for a series of years :

A : Crops

B : Season

Inputs :

(1) Acreage of Land

(2) Labour cost :

Family—Male & Female

Hired —Male & Female

(3) Capital : Implements
Livestock
Transport
Warehousing
Seeds
Manure
Maintenance Charges

(4) Miscellaneous : Land Revenue
Interest on Agricultural Loans
Irrigation Charges.

These basic sets of data, with all their details in comparison and contrast between the co-operative and the private farms, will facilitate a thorough investigation to determine the desirability and success of co-operative farming vis-a-vis private farming in their economic aspects.

With regard to output, grains and hay of the main crops and the produce of the off-season crops will also be duly recorded.

As regards wage bill, the proportion of that of owner-cultivators and of that of hired labourers before and after introduction of co-operative farming will be noted along with that of tenants too because it will give an indication of the employment potential of the two types of farms. Further, for purpose of calculation, only the annual depreciation costs in respect of implements, livestock, transport and warehousing will be taken into account.

On the output side, figures with regard to the volume of production and its value in rupees (harvest price) will be separately noted down for comparison of the respective cost curves.

In addition, general particulars relating to the number of members, years of service, reserves, liabilities, and assets of the farms may be gathered.

In all the above cases, the rupee value will have to be either deflated or inflated to provide for fluctuations, or be calculated at both the current and the constant prices. Such alone will be truly representative.

The source of finance will have to be examined in detail with a view to study the financial strength. Finance may come by way of government loans or grants, deposits from members, credit obtained by sales of the excess of implements over the needed quantity of sales of all of them because of their poor quality etc. As the size of the loan and interest rate on the loan amount varies with reference to its source, this is very relevent for consideration.

The second stage of the study is the actual comparison of the economies of scale : viz. Land, Labour, Capital and Managerial efficiency of the co-operative and private farms. An important point to note here is, if with the formation of a bigger farm holding, there is any increase in any of these inputs, and if so, there is a *pro rata* increase in production. The Technique of Production Function of the various Inputs and Output, will be very helpful at this stage to accurately calculate the marginal behaviour of these factors in different sizes of farms. This will bring out the true merits of each size and nature of farm.

In other aspects requiring investigation at this stage are the way of fixing wages, distribution of interest on capital and returns on production. If wage takes the form of monthly salary, the incentive for labourer to work at his best may be absent. To obviate this difficulty, labour day technique may be employed. An eight hours' day may be fixed. In the alternative, wage may be in proportion to an average worker's volume of work in each particular stage of cultivation operation. Here the desire for earning a high wage will push forward the labourer to give out his best on the farm. Therefore, if such a procedure is adopted in the farm, it may make a considerable difference in the output.

What form does the interest on capital take for distribution ? Is it handed over periodically or credited to each contributor ? How are profits distributed? Is the return to the contributor on an acre of land fixed? If there is a flat rate of return without reference to soil fertility, type and quality of crop etc. it will be an injustice to the different landowners. Here the nature of the farming society, either of single or multi-purpose, will decide the growth and prosperity of the farm.

The adequacy of marketing facilities including standardization, warehousing, transportation etc. has a large part to play in the volume of profits. The attraction of a large volume of profits and its galvanizing effect on public opinion in favour of co-operative farming cannot be stressed too much. How far the different sizes of farms command these facilities must be closely examined and the impediments should be noted down along with any suggestions for their solution offered by the members of the co-operative farms and the tenants or landowners of the private holdings.

The third stage of the study is an examination of the sociological implications of co-operative farming. Whether it is undertaken voluntarily or under compulsion is a significant factor in making the institution a success or failure. If there is compulsion, what is the degree of friction at the points of pre- and post-formation of a farming society ? How far is this nullified by propaganda through dramas, demonstration units etc. ? The psychological working of the peasants' or the land owners' mind is often a reflection of if he acts freely or under duress.

Another related problem is the motivating force behind the formation of a farming society. Is it purely for economic gains or better facilities or supplanting of individual by collective outlook ? What happens to attachment to land ? Does it survive under farming society ? If at the point of formation, there were already agrarian legislations such as consolidation or ceiling on holdings in operation, the initial friction may be much less and attitude soon changed. Here can be gauged whether co-operative farming should precede or succeed other serials of land reforms.

Very often it is argued that it is the persistence of the individual outlook even after the formation of a society that demolishes its chances of success. The landowner is now assured of a fixed return on an acre and so does not bestir himself to any further physical exertion. This subsistence level proclivity can be countered and neutralized by keeping land share income on a lower level than labour share. At this point, some force is not unwelcome on sociological and economic grounds. But the initial formation may be by persuasion, accompanied by progressive shrinkage of dividend shares.

The types of incentives provided have also an important bearing on the problem. It may be in the form of a reduction in working hours, better wages, recreational facilities, medical assistance freely rendered at a nominal cost, provision of living quarters, education etc. If there are already any minimum wage and tenure legislations, whether they are enforced properly will have a telling effect on the minds of labourers. It very often happens that owing to the prevalence of a high degree of under-and un-employment amongst the labourers, they agree to work at a less wage structure. If so, they will work only for wage and no more.

How far the beneficial effects of the enlarged scale of farming are nullified by human factor through the formation

of the society itself? If the individual concerned does not shed his individual identity, it is because he may be persuaded and convinced that his individual loss is greater than the individual gain accrued to him by his entry into the farming society. The loss may be psychological by way of any restriction of his right to sell the land or economical by way of reduction in profits etc. If so how big is his loss? These are matters to be studied after close observation by the investigator and by careful, tactical questioning of both the management and the labourers.

There is also the possibility of small private farms adopting all principles of better farming in the short run, if they are given proper education and technique. The need for social upliftment of the labour class is evident from this. If there is a fair level of education, the responsiveness or resistance by the society or the private farm to the techniques of co-operative farming and the reasons or causes therefor can be more accurately measured. So how far does real education in the rural parts go hand in hand with increasing doses of agricultural reforms?

It is very often believed that co-operative farming implies better farming too. This need not be so. Whether co-operative farming alone or only a combination of both is the need of the hour depends on the development of a given area. Where there is already much development with regard to method of cultivation, seeds, manure, etc. the problem is one of duplicity of functions such as levelling, bunding, irrigation etc. This will be largely true of many villages whose situation borders on the fringes of towns and so, the knowledge of modern technological advancements therefrom, they stand the benefit to absorb. Hence, in such cases, co-operative farming alone by its sheer bigness will effect the necessary economy and better farming is not a necessity.

There is also another point for consideration: What type of landowners volunteer for co-operative farming? What is their relationship? If they happen to be all relatives, they will act as a homogeneous group perpetuating caste or class consciousness. This does not augur well for a healthy growth of co-operatives, in addition to its excluding the effective participation of other landed gentry of the community. Besides, how many of them are working or absentees will tell us whether it is a genuine one or one to safeguard the vested interests.

The nature of the implements used has a telling effect on the sociological envelope of co-operative farming. The general belief that the employment potential of cooperative farming is greater than that of a private farm will be falsified if labour-throwing machines such as tractor are employed. In that case it will create discontent among the workers.

Further the nature and scope of government assistance has a measure of influence on the working of a society such as training of agricultural experts, supply of implements,. concession in land revenue, provision of finance, development of subsidiary industries and agricultural research and education.

Therefore, the need for research of a comprehensive character as indicated here in the working of co-operative and private farming on a scientific basis to rank their respective places in the Indian economy is immense. Without such an overall investigation and concrete facts thrown before the public, it will be very difficult to catch their imagination or appeal to their reason to make co-operation a success in India. There is thus an

imperative necessity, and obligation on the part of the Central and State governments, to undertake a survey of this dimension prior to taking any resolution for wider propagation of co-operative farming.

2222 DAYS OF COMMUNITY DEVELOPMENT

By: FRANCIS V. THADIKARAN

ON 1st November, 1958, the Community Development Programme completed 2222 days of earnest effort to relieve the suffering fraternity from the stranglehold of poverty, illiteracy and disease. This peaceful democratic programme was inaugurated on Gandhiji's birthday on 2nd October, 1952, to impart to the 5,58,000 villages with 82 percent of India's teeming population a new life of hope and progress by assisting each village in planning and carrying out an integrated, multi-phased family and village plan directed towards: (1) increasing agricultural production; (II) providing adequate and timely irrigation for cultivation; (III) improving live-stock; (IV) developing co-operative methods; (V) increasing means of communications; (VI) improving existing village crafts and industries and organising new ones; (VII) providing minimum essential health services and improving sanitation; (VIII) providing basic and social education and organising adult education centres; (IX) providing recreational facilities; (X) organising cultural programmes, youth clubs, mahila mandals and farmers associations; (XI) improving housing and family living conditions; (XII) strengthening village Panchayats and local self-governments; (XIII) developing non-official leadership in rural development; and most important of all, (XIV) changing the outlook and attitude of the 70 million families in the countryside. This socio-economic programme is based on the firm belief that the "salvation of India lies in cottages", and reflects a profound respect for pure and peaceful *means* to a supreme and perfect *end* so as to bring about a happy co-existence of physical advancement and well-being with spiritual freedom and dignity.

Community Development is "a means of self-expression and self-growth and behind it there is the political and economic urge" (Nehru—*Autobiography*) and hence the project came to be known as *Vikash Yojna* (a programme for self-expression) to achieve self-advancement *atmonnati*. Through Community Development self-help is rendered more effective by state help. It is meant "to make men and women 'imbued with a sense of both individual and joint responsibility so that they may rise individually to a full personal life and collectively to a full social life'. It is in this way that rural life can achieve social and moral cohesion which is the only basis for national unity."

Organisation and administration

In 1952, 55 Community Development projects were inaugurated and were supplemented by a less intensive scheme known as National Extension Service in 1953 on the model of the "extension" and "advisory" services in the U. K. and the U. S. A. The total programme for the first Five Year Plan with an outlay of Rs. 52.4 crores was to undertake 1,200 NES blocks– 700 blocks consisting of 70,000 villages with a population of 40 million under the intensive development progra-

mme ; and 500 blocks consisting of 50,000 villages with a population of 35 million under the less intensive Extension Service. It is proposed that by the end of the Second Five Year Plan in April, 1961 India's 5,58,000 villages would be covered by NES, 40 percent of which will be under intensive development programme. and a sum of Rs. 200 crores is ear-marked for the same. Our aims are modest ; there are only few countries with per capita income below Rs. 546, the level we aim at after 18 years, i. e. at the end of the Fifth Five Year Plan in 1976.

Every state is divided into a number of districts and every district in turn is subdivided into a number of project areas. Each project area has three development blocks. Each block comprises about 100 villages spread over about 170 sq. miles and has a population of about 66,000. In India 52 percent (151 million) of the rural population live in 4,84,288 villages, each with a population of below 1,000. These villages are merged together so as to form convenient units with population ranging from 1,000 to 1,500, i. e. about 200 to 300 families.

On the side of administration, the primary link between the State and the people is the multi-purpose Village Level Worker or *Gram Sevak* (1 for every 5 to 10 villages) who has to be a "friend, philosopher and guide". At the village level, plans are drawn up by the *ad-hoc* non-statutory village development councils and village committees. At the block level, there is the Block Development Officer under the guidance of a team of experts to direct and execute the plans drawn up by the Block Advisory Committee. The work of the Sub-Divisional Officer and the District Development Officer at the respective levels is largely one of co-ordinating the programmes outlined by the Block Advisory Committees into a District Plan in consultation with the District Development Committee. At the state level the integration of the developmental programmes in the NES and Community Project areas is done by the Development Commissioner who works under the guidance of the Central Committee consisting of the Planning Commission and the Ministers of Agriculture and Food.

The co-ordination of the developmental programmes is done through four stages :

(I) *The pre-extension stage*, during which local developmental programmes including the local boards' programmes are organised so as to make the people conscious of the environmental challenge.

(II) *The extension stage*, when the NES is introduced in the area in a permanent form.

(III) *The intensive stage*, when the programme of intensive development through community project is adopted in the area for three or four years.

(IV) *The post-intensive stage*, after the period of intensive development when the programme reverts back to the NES stage.

Achievements

On June 30, 1957 there were 2,152 blocks covering 2,76,026 villages with a population of 149.4 million, whereas on October 2, 1958 when the programme completed six years of operation it covered 3,02,400 villages scattered over 2,383 blocks with a population of 164 million. Over and above this, 42 special multi-purpose blocks were started in tribal areas ; and 9 major and 20 minor and rural type industrial estates were established in Community Project areas. During the same period 100 Rural Housing Projects were started in 100 development blocks, each project cover-

ing 5 villages on an average. On the side of livestock improvement, more than 5,900 Key Village Centres were started with *gosadans* and various steps were taken to improve the supply of fodder. Pedigree animals distributed during the period amount to 525,000 and pedigree birds, 400,000 while 38,900 improved animals were supplied to the Block people. Animals castrated totalled 3,487,000 and those medically treated numbered 29,084,000.

To achieve a notable improvement in agriculture the programme has completed the reclamation of nearly 3,000,000 acres and an additional area of about 4,000,000 acres was brought under the plough. Soil conservation practices were put into operation on hundreds of acres subject to wind and water erosion through bunding, terracing, strip-cropping, contour cultivation and soil conservation farming. From the beginning of the programme, upto the end of March, 1958 4,185 seed farms were opened and 13,625,000 maunds of improved seeds had been distributed. The quantity of chemical fertilizers distributed totalled 3,28,67,000 maunds. The area cultivated with green manuring stood at 26,32,000 acres. The Japanese Method of cultivation is adopted on nearly 7.5 million acres.

For the improvement of health and sanitary conditions, the programme upto June 30, 1957, had organised 3,859 primary health centres and 1,259 maternity and child welfare centres. On the side of sanitation, 220,000 rural latrines, 121 lakh yards of village drains and hundreds of modern urinals were constructed. For the supply of drinking water 83,000 new wells were constructed and 119,000 old ones renovated.

Commendable progress has also been registered in the field of social education; 25,000 new schools were started and 10,325 schools were converted into basic ones. At present there are 88,000 adult literary centres with 2,479,000 adults on the rolls. The number of community centres organised is 150,000 and units of people's organisations 169,000 in addition to various *Vikas mandals* in the project areas. On the side of co-operation 59,000 new co-operative societies were started with 31.1 lakh additional members.

Considerable attention has been paid to the improvement of the means of communication. After the beginning of the programme 9,140 miles of pucca roads and 59,000 miles of kaccha roads were constructed and 52,000 miles of roads were repaired and improved.

For the training of personnel, 58 Extension training centres for *Gram Sevaks* and 25 Home Economics wings for *Gram Sevikas* were organised in addition to 2 Home Economics Centres. For the dissemination of agricultural intelligence and to impart proper training to the ryots 78 basic agricultural schools and 18 agricultural workshops were established in the project areas. Besides these, 14 training centres for Social Education Organisers, 4 for Block Development Officers, 8 for Block Level Extension Officers (Co-operation) and 11 for Block Level Extension Officers (Industries) were set up. Health personnel are being trained in 3 centres, and the number of institutions for training auxiliary nurse-midwifes is 66, centres for training lady health visitors 9 and for midwifes 6. *Gram Sahayaks* (functional village leaders) to help the villagers to increase production and to advise them so as to bring about a change in their outlook, are also being trained in the project areas.

Community Development can aptly be called *people's projects with Government participation* (and not as the old definition goes: Government projects with

people's participation). People's participation in 1952–53 amounted to 41 percent, in 1953–54 to 68 percent and in 1954–55 to 72 percent. In 1953–54, people's participation in in NES stood at 150 percent. At present in 2,095 blocks the voluntary contribution of the people in the form of cash, kind and labour amounts to Rs. 57.65 crores as against the provisional total government expenditure of Rs. 99.4 crores. "Labour was willingly and gladly given and it was hardly felt irksome, and therefore very great progress was possible".

Outlook

The initial success of the Community Development programme is no case for complacency in future. This is only the first mile-stone on our way to a Welfare State. As Gandhiji said, the supreme ideal is a perfect individual in a perfect society. Therefore, we have to continue the work of economic and social emancipation of the common-man with a renewed patience and persistence that refuse to be discouraged. It is impossible to be unsuccessful.

DECIMALISATION OF WEIGHTS AND MEASURES

By : Prof. C. L. KHANNA

WITH the launching of the Second Five-Year Plan India stands committed to industrialization. To achieve that end and to make rapid advances in science (consistent with the present age of sputniks) it is inevitable that we must have standardised and uniform measures of weight, length, mass, area and capacity etc. all over the country. They must, at the same time, be of universal acceptability and have a close relationship, if not complete identity, with the international measures.

At the moment we have a bewildering multiplicity of such measures and a state of complete chaos prevails although by force of habit we have become so used to it as to suffer it without a demur. A recent national sample survey revealed, for example, that in 1,100 villages, scattered all over the country, as many as 143 different systems of weighing are in use. More than 100 types of maunds exist with weights varying from 280 to 8300 standard tolas. The 'seer', similarly ranges in weight from 8 to 160 standard tolas compared to the standard 'seer' of tolas. In Madras a seer weighs 24 tolas and in Bengal and Bombay 80 tolas. The prevalence of such a great diversity and arbitrariness in weights etc. affect adversely all sections of the population but none is so hard hit as the farmer-producer. The absence of a standard weight jeopardizes his interests in getting a reasonable price for his wares. His illiteracy and gross ignorance add to his difficulties in understanding exactly the market quotations in different markets, in different commodities and at different times. Complicated calculations being beyond his ken, he is easily duped by unscrupulous middlemen and traders.

This chaotic state of affairs prevailed with greater intensity and magnitude in the early days of the British rule in India and it persisted during their regime of over a century and three quarters despite the enactment of laws by the State Governments. To flush away the "augean stables", the British Government appointed a Committee in 1867 with Colonel Strachey as its chairman. That Committee submitted a memorandum and recommended the enforcement of the metric system of weights and measures

with effect from January 1, 1871. The Bill on the subject was passed but the Act became a dead letter owing to the unfavourable majority opinion of the Committee and the opposition from the vested interests in India and England. For about 86 years now the British 'Foot-pound' system continued to hold the sway when on August 13, 1956, there was a swing of the pendulum to the other extreme. The Indian parliament took up, at the instance of the Planning Commission, the question of reforming the existing system of weights and measures in the country in the context of the political and economic changes. The Lok Sabha passed the New Metric System of weights and Measures on December 10, 1956.

It is a happy coincidence that exactly on this day 157 years ago, the French National Assembly fixed by law the value of the 'metre' and the kilogramme, the basic units of the Metric System of Weights and Measures. The Standards of Weights and Measures Act (Act 89 of 1956) was brought on the statute book on December 28, 1956. This is the first Act formulated on an all-India basis and repeals the Measurment of Length Act 1889 and the Standards of Weight Act 1939 besides 16 other Acts in force on the subject in the States. The new Act is, thus, calculated to bring about a metamorphosis of the entire system of weights and measures in the country. In order to ensure its successful implementation it is assential that both the intelligentsia and the illiterate section of the people are posted up with the provisions and the implications of the new system.

Main Provisions

The nomenclature of the Act is derived from the term 'metre' taken from the Greek word 'metron' and the Latin verb 'Me' meaning 'to measure'. The main stipulations of the new Act are :

1. That the basic units for linear, capacity and area measurements etc. will be as follows :

Table I

Measure of Length

10 Microns	=	1 Milli-metre
10 Milli-metres	=	1 Centi-metre.
10 Centi-metres	=	1 Deci-metre.
10 Deci-metres	=	1 Metre.
10 Metres.	=	1 Deca-metre.
10 Deca-metres	=	1 Hecto-metre
10 Hecto-metres	=	1 Kilo-metre
10 Kilo-metres	=	1 Myria-metre.

Area & Volume

By adding the prefix 'square' and 'cubic' to the above linear measures, we get the corresponding area and volume measures respectively, e.g. square millimetre, square centi-metre; cubic millimetre, cubic centi-metre and so on.

Weight. The basic unit for weighment is a gram or gramme. If this term is substituted for the 'metre' in the above linear measures, the weight measures are obtained, e.g. Micro-gram, milli-gram centi-gram, deci-gram, deca-gram, hecto-gram, kilo-gram, quintal (100 kilo-grams) and metric tons.

Capacity. The substitution of the word 'litre' for 'metre' in the above table would give the measures of capacity e. g. Micro-litre; milli-litre, centi-litre, deci-litre; deca-litre; hecto-litre and kilo-litre.

It will facilitate to remember the meaning of these prefixes of Latin and Greek origin if we note the following explanation :

Latin Derivatives

Deci means 1/10 of a specified unit;
Centi means 1/100 of a specified unit;
Milli means 1/1000 of a specified unit;

Greek Derivatives

Deca means 10 times the specified unit:
Hecto means 100 times the specified unit;

Kilo means 1000 times the specified unit;
Myria means 10,000 times the specified unit;

2. That the dead-line for the enforcement of this Act is ten years from the date of its passage, that is, upto the 28th December, 1966.

3. That it shall apply to the 13 States (Andhra, Assam, Bihar, Bombay, Kerala, Madhya Pradesh, Madras, Mysore, Orissa, Punjab, Rajasthan, Uttar Pradesh and West Bengal) and 5 Union Territories (Delhi, Himachal Pradesh, Manipur, Tripura, Andaman and Nicobar Islands). The State of Jammu and Kashmir is beyond the purview of this Act.

4. That the present system of weights and measures will continue operating simultaneously with the new one for a period of 3 years or less as may be notified by the Government; that is, the metric weights and measures will be used at the same time as the 'maund and seers'. In pursuance of this decision, the Indian Standard Institute has prepared conversion tables for computing the old measures into their equivalents in new ones. Illustratively we give below some equivalents :

Table II

Nature of Measure.	Existing Measure.	Metric Equivalent.
1. Length.	1 inch	25.4 milli-metres.
	1 yard	0.91 Metres.
	1 mile (1760 yards)	1.61 Kilo-metres.
2. Area.	1 square yard	0.84 square metre.
	1 acre (4840 sq. yards)	0.41 Hectares.
	1 square mile.	2.59 square Kilo-metres.
3. Volume.	1 cubic yard.	0.76 cubic metre.
4. Capacity.	1 Imperial gallon.	4.55 litres.
5. Weights.	1 Ton	1.02 Metric Tons.
	1 cwt.	0.51 quintal.
	1 maund	0.37 quintal.
	1 seer	0.93 kilogramme.
	1 Pound	0.45 kilogramme.
	1 Tola	11.66 grammes.

Merits of The New System

1. *"Indian" System.* The new system is now a 'fait accompli' and the discussion as to its utility is only of an academic importance. It is recognised on all hands that the metric system, which has come into force in India in certain specified areas and industries[1] with effect from October 1, 1958, in accordance with the three notifications issued on June 26, 1958, by the Central Government, is by far superior to the existing chaotic, confusing and complex system. Sometimes ago Mr. C. Rajagopalachari, commenting on this system, said :

"It is appropriate that India should put her weights and measures to-day in line with the international scientific world adopting what is truly her own[2] decimal system".

1. In the Jute industry it came into force from July 1, 1958.

2. The Metric system is based on decimalisation which was discovered by an Indian Mathematician some 2000 years ago. We may quote here the observation made by Laplace, the great Mathematician: "It is India that gave us the ingenious method of expressing all numbers by ten symbols, each receiving a value of position as well as an absolute value; a profound and important idea which appears so simple to us now that we ignore its true merit. But its very simplicity, the great ease which it has lent to all computations, put our arithmetic in the first rank of useful inventions; and we shall appreciate the grandeur of this achievement the more when we remember that it escaped the genius of Archimedes and Apollonius, two of the greatest men produced by antiquity."

2. *Standardised & Uniform Measures.* We have already stated earlier that the existing system, which was introduced by the Britishers, does not guarantee standardised measures. Since the adoption of weights and measures was a State subject, the then Government at the Centre upholding the *laissez faire* policy regarded it as *ultra vires* to form any law on this subject. Every State Government, therefore, focussed its attention on the requirements of the State. The respective laws were, thus conditioned by the local customs and traditions. No uniformity or universality could be achieved. For the first time in the annals of our country the Union Government of Free India undertook to have one law for the entire country abolishing the measures obtaining under the State Government legislations. This policy will ensure uniformity and also serve, indirectly, as a link of unity of India. The new system will serve as a mighty ally for the liquidation of the prevailing anachronistic system.

3. *International collaboration.* The metric system is prevalent in as many as 58 countries of the world. United States of America, United Kingdom and the Commonwealth countries being the only exceptions. In fact, even in the Common-Wealth where the English 'Foot-Pound' system is used, the metric system has a legal status and is being increasingly used. India's foreign policy of non-alignment has already won it the pride of place in the East as well as the West. But for economic advancement India stands in need of foreign aid. At no time in the past has the demand for this been pressed so strongly as at present. The metric system will take India a step further towards the international world and being nearer it the much-needed help might be forthcoming in an abundant measure.

4. *Inter-State Trade.* With the expansion of the trade channels within and between states, it is necessary and desirable to have the same measures for facility of trade and commerce. Diverse measures, on the other hand, tend to act as the roadblocks. If the trade is hampered, the progress of economic development will suffer.

5. *Industrialization.* Accelerated industrialization is one of the objectives set forth in the Second Plan. The metric system will provide the necessary acceleration. Moreover India is now on the threshold of an industrial revolution. Many new machines and other equipments are being installed for new industries and for the renewal and rationalization of the old ones. It is advisable to have them (machines etc.), as far as possible, on the basis of the metric measures. Changes, at a later stage, when we would have advanced far enough, will not only be expensive but impossible technologically.

6. *Easy calculations.* The new system is simple, scientific, uniform and integrated. As in the decimal system of coinage so in the metric system of weights and measures, calculations and solution of sums for the school-going children will be simplified.[3] Time and energy will be saved beyond measure.

7. *Symmetrical structure.* The simplicity and superiority of the metric system is based on its symmetrical and integrated structure. All the weights and measures, as Table I above indicates, are linked. For example, the litre is the capacity contained by the 10 centi-metre side cube, and a kilogram is the weight of water contained in that cube or it is equal to the weight of a platinum cylin-

3. It is estimated that the old system of Coinage (Rupee-anna-pie) entailed 20 percent more expenditure of time than the Decimal System does.

der whose diameter and height are equal, that is, 39 milli-metre.

Criticism

There is hardly an innovation which escapes the eye of a critic. In a democratic country like ours, which is prone to all types of political upheavals and where opportunist politicians whip up opposition to make capital out of the orthodox and uninstructed public, the metric system of weights and measures involving tremendous changes and expenditure cannot be accepted with equanimity. We note below some of the points of criticism to help form a balanced view on the issue under discussion.

1. *Not Indispensable.* It has been argued that at this time of social and economic transition there are many other reforms, more urgent and important, than the metric measures. Such a line of reasoning is but a betrayal of gross ignorance of the havoc done by the vast and confusing multiplicity of measures prevalent under the existing system. How this is so has been discussed in an earlier part of this article and does not bear repetition.

2. *New Terms.* Some protagonists of Hindi and Sanskrit have urged the use of nomenclature of the new measures in either of these languages. The argument is untenable for all the equivalents of the international names are not known. Moreover it is incomprehensible why the international names should be an anathema for us especially when the introduction of the new system has been actuated by the desire to bring India in alignment with other nations which have already adopted this system. We crave for all sorts of financial and technical assistance in one form or the other from foreign countries. Where is the harm in adopting the well-known and widely-accepted international terms ? Moreover, the pronunciation of the international terms is so simple (not "jaw breaking" as in Sanskrit) that they could be pronounced in any language of the country. Barring China, all other countries in the world have adopted these very terms.

3. *Time-limit.* The Metric System Act has set a time-limit of 10 years for its enforcement. According to Prof. Hiren Mookerjee this time-limit for the change-over should have been reduced to 5 years so that every one felt earnest and enthusiastic about the task. It has been urged by the Government that the switch-over to the Metric System took 8 years in U. S. S. R., 13 in Thailand, 10 in Italy, 4 in Czechoslovakia and 3 in Turkey. In the case of India where there is a democratic set-up of Government and where 84 percent of the population (of which about 80 percent lives in villages) is illiterate, the ten-year period is not excessive. The Government's stand hardly stands scrutiny. In the case of the decimal system of coinage the ceiling was fixed at 3 years, with prospects of extension, if necessary. The same policy could be adopted here. Mr. Nityanand Kanungo, Minister for Consumer Industries, who piloted the Bill for Weights and Measures held in Parliament that the ten years' period was the maximum and not the minimum. As the Government's policies usually run tardy, the maximum interval in this case also will become the minimum. The stipulated time is, obviously, too long and likely to make us lethargic and indifferent in regard to the implementation of the new system of weights and measures.

4. *Practical Difficulties.* The conservative-minded critics have tried to magnify the hurdles besetting the enforcement of the Law. It is undeniable that during the transitional period considerable difficulties will confront us in acquainting the masses, especially the villagers

in remote regions, with the innovation. But is it not even truer that the advantages far outweigh the transitory disadvantages and difficulties. No change can be effected without some sacrifices and sufferings. And when the reform is of a country-wide character, none would like to minimise their incidence. But it is pleasing to notice the great resilience of Indians. Only about a year and a quarter ago when the decimal system of coinage was introduced, feelings of revolt and resentment were voiced through the Press and from the platforms. With the march of time the "deluge of opposition" has ebbed away and the new coinage system is operating satisfactorily in the towns and cities, which are the nerve-centres of our money economy.

Implementation

It has taken the Government about 18 months to go through the preparatory work before the actual enforcement of the Law. On June 26, 1958, three notifications were promulgated for its actual implementation. The process may be divided into three stages :

Stage I. Owing to the special conditions of the Jute industry,[4] whose production season begins in the month of July, the new system has been introduced in the case of this industry with effect from July 1, 1958.

Stage II. In certain specified areas in all the States (except the Jammu and Kashmir State) the metric system has become operative for all purposes in trades which have transactions by weights. In the Punjab only 6 out of the 18 districts have been clamped under this system. The law has come into operation on October 1, 1958, and the transitional period has been fixed as two years ; that is, both the old and the new measures of weight will continue to be used until September 30, 1960.

Stage III. The Act will be extended to areas not covered on October 1, 1958, and the whole country will be encompassed by early 1960, that is, by about the end of the Second Plan. The length and capacity measures will also be introduced by then.

The enormity of the problem in the matter of supply of new weights and measures and the cost involved therein is not easy of computation. According to the available estimates the cost in the States would be to the tune of Rs. 5 crores and for the three departments—the Railway, the Defence and the Post and Telegraphs—it will be as much. In the industrial sector the cost is inestimable. But it is bound to run into several crores. The Punjab Banking Enquiry Committee (1930) estimated that a complete set of standard weights cost at the Mint Rs. 534/1/- which was obviously prohibitive even in the thirties of the present century.[5] It was because of the high costs during the "dark days" of the Great World Depression that, despite the legislations, standardisation and uniformity in weights and measures were not achieved. Suggestions have been thrown up now that the new system can be effectively and successfully enforced given cheap supply of measures.

The Government is, at present, faced with the manufacturing difficulties of the new measures in the various denominations. Private and State manufacturing establishments are therefore being harnessed into service to have the requisite supply of standard weights and measures of the prescribed design.

4. Other industries brought under the Act are : 1. Cotton textile ; 2. Iron and Steel 3. Engineering ; 4. Heavy chemicals; 5. Cement 6. Salt; 7. Paper; 8. Pulp and Paper board ; 9. Refractories; 10. Coffee; 11. Non-ferrous metals; 12. Rubber; 13. Forward Trade in cotton by recognised associations.

5. Agricultural Marketing in Northern India by Dr. S. A. Hussain, page 123.

The need for extensive publicity cannot be emphasised too strongly. The public, especially in the villages, has to be well-acquainted with the new system through audio-visual methods, such as, films, radio, press, hand-outs and pamphleteering etc. The town municipalities, corporations, village panchayats, schools, factories and other institutions have to be provided with the new measures free of charge for publicity purposes. It is a tremendous task. But it must be executed with unflinching determination.

Conclusion

The metric system of weights and measures is suited well to the genius of India and its adoption should have even preceded the Decimal System of Coinage for the two are complementary to each other. The introduction of the new system is quite natural for it is in a way our own indigenous system returning from its conquests abroad. It will come in as a friend and help us flush away the chaos and mire of the existing system. It will help India align itself with other scientifically advanced countries in the world. The advances in science and industry will be quickened and the internal trade considerably boosted up. The Indian peasantry will be the biggest gainer by having been saved from the under-and over-weighment practices frequently and fraudulently indulged in by the traders and middlemen. All these improvements will pave the way to India's prosperity more than what is possible in the absence of the metric system.

STUDIES ON COMBINING AND HARVESTING BY MANUAL LABOUR

By : R. M. SINGH

IN India leading farmers and agriculturists having larger area under cultivation have resorted to mechanised farming parting with the old system of maintaining a huge livestock for draft and engaging a number of labourers for ploughing and other allied operations. On large farms the important operations like sowing and harvesting are usually delayed resulting into reduced return per acre when these operations are performed by human and animal powers even when time and labour saving improved implements are used for the purposes. It is, on the other hand, claimed that there is no dearth of labour in India but the difficulties have been realised in obtaining requisite contingent of labour on many mechanised farms during the two peak seasons e.g. October-November and April-May, when huge gangs of labour are required to harvest and process the crops in time. During these peak periods labourers are busy in such operations either on their own fields or on their neighbour's and when they have finished these operations in their surroundings they come to the farms and demand a much higher wage than the normal throughout the year; because they think that the harvesting operation cannot be finished in time unless a crowd of labourers is engaged for the purpose. Under the circumstances high wages are paid which result in high cost of processing.

These difficulties can be minimised if the operation like harvesting especially of wheat during rabi season could be done mechanically using a combine where both the operations of harvesting and threshing are done simultaneously. In this way the fields are cleared up in time for hot weather cultivation and grains come to the godowns before the onset of early monsoon or they can be disposed of in the market by the middle of April when the prices are higher. The

number of temporary labourers required are also very few. But there is one objection to it; that the straw after combining is thrown out in the field which cannot, easily, be collected and used for making bhusa. This brings some monitary loss which, otherwise, could not have been when bhusa was sold for some price.

Economics of Operations

There were many speculations on the comparative cost of combining on the one hand and harvesting by manual labour and threshing by a combine used as Stationary Thresher on the other. When the combine is used in the field the value of *Bhusa* is lost. When harvesting is done by manual labour the problem of adequate labour is faced. In order to find out the economics of both the systems the costs of the operations were calculated at B. R. College mechanised farm, Bichpuri (Agra) in 1956. The farm owns an International Harvester *Combine* (52R– a small one meant for 100 acres only) operated by a Massey Harris 44D Tractor either used as a combine or as a stationary thresher. After threshing the crop at the threshing floor the straw was made into fine bhusa by using a 10C Hammer Mill (I.H.). Though it is a feed grinder it does the job of bhusa making well giving an average output of 5–6 maunds per hour, operated by an electric motor (Hydro-electricity).

Below is the cost of operations. It concerns with a comparison of stationary threshing with hand harvesting and combining. In combining one may lose the value of bhusa, so it has been given below how much extra money was spent on hand harvesting and stationary threshing and hammer mill processing for getting bhusa over the combining operation. The extra cost is as below and it is calculated per acre with an approximate yield of 25 to 30 maunds of bhusa. The number of labourers used in various operations have been reduced to minimum on experiences. The rates of wage are the prevailing rates during that season (1956 Rabi).

Extra Operations over combining.	Cost per acre.
(i) 7 persons for harvesting and hauling on threshing floor @ 1/12/– per head.	Rs. 12/4
(ii) Extra labour 2, for stationary threshing over combining @ 1/12/– per head	Rs. 3/8
(iii) Bhusa making by Hammer Mill :—	
(a) 5 persons for feeding and collecting straw from the threshing floor @ 1/12 per head	Rs. 8/12
(b) Electricity consumed for 30 maunds bhusa 30 units @ 6 units per hour for five hours @ –/1/– per Unit	Rs. 1/9
(c) Depreciation of motor @ –/3/– per hour for five hours.	Rs. –/15/–
(d) Running, repair and depreciation charges of H. Mill @ –/8/– per hour for five hours.	Rs. 2/8
(iv) Loading charges of bhusa in truck or carts 2 persons @ 1/12/– each	Rs. 3/8
(v) Unloading and weighing at delivery spot 3 persons @ 1/12 per head	Rs. 5/4
(vi) Transport charges –/7/– per maund for 14 miles per return trip for 30 maunds of bhusa	Rs. 13/2
(vii) Octroi charges for 30 maunds in a truck @ Rs. 7/– per truck for 45 maunds	Rs. 5/–
(viii) Supervision charges @ –/5/– per hour for 5 hours	Rs. 1/9
Total expenditure	Rs. 57/15

The cost per acre comes to 57/15. On this rate the cost per maund of bhusa comes to Rs. 1/14/- to Rs. 2/- when the average production of bhusa is from 25 to 30 maunds per acre.

During this peak period bhusa was sold at Rs. 2/4/- per maund in Agra so the profit was only -/4/- per maund. But for this small profit one had to be busy the whole season and invariably it was not possible to deliver the entire produce even by the end of June in previous years. If one does not concentrate on bhusa the attention can be turned towards a more remunerative crop of Kharif season e. g. Cotton in most areas. Also if the villagers can be induced to collect the straw themselves and give a share equivalent to Rs. 6/- to Rs. 8/- per acre, the loss of -/4/- per maund of bhusa can be compensated which really works up Rs. 6/- per acre. It can more than compensate by selling a part of wheat produce at a higher price before the 15th April when others cannot bring new wheat into the market. There is an added advantage for a private enterprize where the farmer has to earn and live, that selling of wheat early in the season provides money for this expensive season (harvesting and processing).

A really good farmer will even be prepared to lose Rs. 6/- per acre by not processing bhusa because of the other advantages accruing. This loss is made good in other ways. The relief that the farmer gets by the feeling that his rabi operations are over, say, by the 15th May, is very great. Use of the combine saves labour against watching and escapes accidental danger of fire attacks on the threshing floor which takes place in some cases. By using a self-propelled combine, the tractor can be spared for hot weather cultivation which is very essential for increasing the depth of soil and this will minimise the cost of operation also.

Difficulties in Operation

While combining the wheat crop is harvested at a height of 1½′ to 2 ft. from the ground level depending on the height of plants. If the entire stock to the ground level is harvested, the machine may plug when the crop is thick and tall. If it is desired to collect the straw from the combined field, not only the straw thrown by the machine should be collected but also the unharvested stubble would have to be cut. Doing this by hired labour would be uneconomical. This can be ploughed into the fields with no problem of its decay.

There are five tender parts in a *combine* machine which need careful attention when in operation. A good operator manages them properly. Regular check up and oiling before work increases the efficiency and life of the machine. When such machines are worked on undulating fields, lower parts especially the blower is damaged while crossing the high irrigation bunds and channels in the fields. Such bunds need levelling before using the combine efficiently. This can be done easily when last irrigation is given to the crop. One labourer is sufficient to break such bunds in one acre area in a day. For better results big and long fields should be worked with machine where less turnings are needed. In most cases when combining on unripe crop, or a crop moist with dew as it may have early in the morning, unthreshed ears along with straw may be thrown out. This increases the loss of grains but can be overcome with proper judgment of the maturity of the crop and experience gained during the operation of the machine. A feeding canvas should be kept extra so that when any replacement is needed it may be done without delay. It is often replaced because the horny bushes and weeds along with the crops are harvested and when they plug the

machine, while working, the canvas may get torn. Some adjustments need be done while in operation otherwise threshed grains are also thrown out along with the straw. When the machine is in order efficiency is very high.

Recommendations

On mechanised farms situated far away from the markets and place of disposals, combining may help in timely harvest and processing. Fields are cleared up early in the season where hot ploughing can be done when the machines are free for this job. Hot weather ploughing may help in early Kharif sowings. At least *Sanai* can be sown in dry cultivated fields a week earlier than the first showers in their anticipation. This helps especially those farms where longer areas under green manure crop have to be kept to increase the fertility level. Under limited resources of machines sometimes it becomes difficult to seed the whole area under sanai in time.

PLACE OF MULTIPURPOSE HARMONE 2-4, D IN INDIAN AGRICULTURE

By: **D. V. S. CHAUHAN & O. P. DAHAMA**

UNDER the present drive of "RABI CAMPAIGN", when we want to increase the production of food grains by the increase in yield per acre and adding more area under the crops, it is very necessary, to make this device of weed control known to the extension workers as well as to farmers. Through the use of this device the weed infested fields, which are not fit for sowing the Rabi crop can be cleared by spraying only with little labour and expenditure, which is within the reach of individual farmers. It can also be very effectively used as a weedkiller in standing crops and so will keep the crop free from weeds.

Besides its use as a weed killer 2-4, D, can be used for many purposes like the growth promoter, for inducing root formation (50 to 1000 part per million), for inducing seedlessness in tomatoes (at 0.0005%, 0.001% and 0.0025% concentration) and cucumbers (at 0.025 to 0.5% concentration in lenolin), applied to the peduncle as well as stigma and cut surface of style. Here we shall deal with the weed killing side of it.

2-4, D is the abbreviated name of the sythentic harmone 2,4 dichlorophenoxy acetic acid, which is white crystalline material with a molecular weight of 22·04 and melting point of 138°–140° C. Three types of commercial preparations of it are available in India, which can be dealt as under :

1. Acid

It is a crystalline substance almost insoluble in water. However with a suitable surface tension agent it forms quite a suitable suspension in water or oil. Being translocated in the plants it can be conveniently used as a low volume spray.

2. Salts

These include Sodium, ammonium and amine salts. Salts are soluble in water but Amine salts dissolve more readily than Sodium or Ammonium salts. Sodium salts are washed away from leaves more readily than amine salts as such the effectiveness of amine salts is not reduced even if rain falls within four hours after its application. Amine salt is non-volatile, so it is

a safe form of 2-4, D for use in the neighbourhood of valuable plants. Sodium salt is the cheapest form of 2-4, D. Amine salts act as intermediary agencies between sodium salts and esters in the potency of herbicidal action.

3. *Esters.* These are alcohol derivatives. Ester preparations are the most expensive form of 2-4-D but are the most useful. They form milky emulsions with water. They are better for eredicating woody plants and waxy foliage than other forms of 2-4-D. They are also more effective under unfavourable weather conditions than salts. They should be used at a lower rate than other types of 2, 4-D because in excess they injure the crop plants. Most of the esters are volatile as such avoid their use near valuable crops. Low volatile esters are distinctively superior to the higher forms with respect to absorption and translocation.

Availability of 2, 4-D in India

It is available in India under the following trade names :

Trade Name	Can be had from
Shell 2, 4-D weed-killer	Burma Shell Oil Co. Ltd., Bombay.
Fernoxone	Imperial Chemical Industries, Kanpur.
Hedonol (Powder) / " (Liquid)	Chika Private Ltd., Bombay.
Weeder 64	Agromore Company, Banglore.
Weedone	" " "
Weedex	Shaw Wallance Co., Calcutta.
Kathone-2, 4-D	Amrit Lal & Co., Bombay 1.
Dicotox '40'	May & Baker Co., Madras.
Planotox	" " "
Crag Herbicide No. 1	National Carbon Co., Calcutta 1.
2, 4-D. Dow Weed Killer	Indian Commercial Co., Bombay.

Crop Susceptible to 2, 4-D:

(1) Very susceptible- Tomatoes, tobacco, beans, spinach, carrot, radish, corriander.

(2) Susceptible-Cotton, sun-flower, all legumes, broad leaf vegetables, cucumbers, chillies and oil seeds.

(3) Intermediate-Cereals, millets, sugarcane, linseed, perennial and annual grasses.

Time and Method of Application

It is most effective if applied in bright sunshine. It will kill more quickly when used during warm weather. It is slow in action below 70°F, while at temperatures above 95°F, best results of 2, 4-D are not achieved due to high evaporation. Moderate and strong winds are unfavourable for its use either by dusting or by spraying. High humidity of air is better for having more adherance to the vegetation and maintaining the spray in solution on the leaves. To have satisfactory results with 2, 4-D, there should be enough moisture in the soil for active and succulent growth of weeds.

It can be used both by dusting in low concentration with a suitable carrier or by spraying it with water. Though dusting is preferable in areas short of water but higher ratios of active material are needed than in spraying. Spraying in low volume sprays is preferable to high volume sprays, because former is cheaper and can be used with great ease with a considerable reduction in the amount of water used. Moreover low volume spraying can easily be done on small scattered fields by ordinary farmers, as in case of India.

Spraying or Dusting Equipment for Indian Conditions

Dusters and sprayers are available in various capacities from one pound to several gallons. In India many engineering firms manufacture and sell them at very reasonable rates. Some such firms are:

(1) New India Corporation, P. Mehta Road, Bombay 1.

(2) Ensign Engineering Corporation, G. T. Madras 1.

(3) Gwalior Engineering Works, Gwalior.

(4) American Spraying & Pressing Works, Malad, Bombay.

(5) Shaw Wallace & Co., Calcutta.

(6) Sharma & Sons, Aishbagh, Lucknow.

Results Achieved under Indian Conditions

The follwoing trials prove that its use is very profitable :

(a) According to Dr. Verma and Mr. Bhardwaj of I. A. R. I. New Delhi, one pound acid equivalent of 2, 4–D (80% Sodium Salt) has increased wheat yield from 10.8% to 42.3% over control and net profit from Rs. 18.73 n.P. to Rs. 74.34 n.P.

(b) Trials at Central Rice Research Instt., Cuttock has shown that yield of rice increased to 112.3% by 2 pound acid equivalent of 2, 4–D (Chloroxone) and by the use of MCPA (Phenoxylene–30) over the control.

(c) According to T. R. Narayan and D. Meenakshi–Sundram, use of butyol ester 2, 4–D at 5 pounds per acre has controlled the weed oxalis latifolia.

But such trials have only been on limited area and not on farmers' holdings. If it is carried out on larger scale on farmers' holdings it will surely increase the yields to a great extent.

Precautions

It should be used cautiously and judiciously. The following precautions are suggested :

(1) It should not be used in overdose and so it is necesary to consult an expert before its application.

(2) Never allow livestock to graze nearby the field sprayed with 2, 4–D.

(3) 2, 4–D should be stored separately from other agricultural chemicals and containers should be lebelled and kept closed.

(4) Spraying should not be done when the wind velocity is high.

(5) Susceptible crops should not be sown in the field where 2, 4–D is directly sprayed on the ground before 60 days.

(6) Drainage water from the treated field should not be allowed to pass through cultivated fields.

REJOINDER ON BEE-KEEPING

By : **S. K. KALLAPUR**

I WAS astonished to read in the "Rural India" (September, 1958, issue) an article from Shri Nautamlal C. Tejpal on Beekeeping. He says that the average yield of honey per hive in Egypt is 200 lbs. a year, while the professional Egyptian beekeeper gets an average of 400 lbs.

I am having in my possession a letter from none other than Shri Tejpal dated 8–10–54, College Wadi, Rajkot, in which he gave the Khadi and Village Industries

Board to understand that the average yield per hive in the area mentioned in the article is 25 lbs. while the professional beekeepers who possess as many as 500 or more hives obtain as much as 50 lbs. a year. Much of these is a verbatim reproduction of the letter in my possession. I wonder how 25 became 200 and 50 became 400 :

Unbelievable

What he states is unbelievable. The strain of bees known the world over as the highest yielding strain is the *apis mellifera ligustica*, otherwise known as the Italian Bee. I have been in Italy, the homeland of these bees. In Italy which produces the *ligustica* queen-bees for export to all countries in the world, the average yield of honey per colony is about 9 Kgms. or 18 lbs. a year. The average production per hive in Switzerland from this strain is 4 Kgms. (8 lbs.); in France it is 8 Kgms. (16 lbs.) and in Australia 20 lbs. The average for Russia where the best technique is employed, it is 14 lbs. In Norway the average varies from 12 lbs. to 28 lbs. according to the regions.

U. S. A. and Australia are the countries where beekeeping has advanced the most and the beekeeping practices are said to be the best. The average yield per hive with the ligustica queen were :

Year	Australia	U.S.A.
1954	84.15	38.6
1955	76.51	47.8
1956	79.90	40.2

The average for the previous 8 years for Australia was 44.6, 41.0, 62.3, 115.2, 58.7, 48.3 and 67.4. The average for Canada for the last 5 years was 77 lbs.

Cross-Breeds

Now, about the cross-breeds between the Egyptian and Czechoslovakian; Shri. Tejpal gives an average of 250 lbs. I have the figures for Czechoslovakia where the average for the various regions, ranges from 2 Kgms. to 6.6 Kgms. i. e. 4 lbs.to 13 lbs. In his letter to the Khadi and Village Industries Board dated 8-10-54 Shri Tejpal had informed that the average of this cross-breed was 25 lbs.

I admit, however, that a few colonies here and there do give very high yields: the record is 860 lbs. in Russia, about 800 lbs. in Australia, about 600 lbs. in U.S.A. In our own country, a few colonies have given a yield of 200 lbs.

The production of honey does not depend solely on the breed. The soil, the environments, the skill and the industry of the beekeeper in the management of bees are equally important. If these are not suitable or absent, the breed degenerates.

An Experiment

A few colonies of the best strain of the Italian bees were imported by some Britishers and the Punjab Government some years ago. What is now left is the disease which was brought with them. It has been recently declared by the Bee Research Institute of Liebefeld in Berne (Switzerland) that the mite found on the disease-stricken bees in and around the Government bee farm at Nagrota (Punjab) is exactly the same as is come across in Europe.

It has been recently declared that the bees in North Africa do have the foul brood disease which is a highly contagious one and affects and destroys colonies of bees miles and miles around.

It is for this reason that the Government of India have banned the import of foreign bees into India. Our own bees, though poor yielders, do not have any diseases.

Our Search

The Khadi and Village Industries Commission has not been unmindful of the importance of a good strain of bees

in the interests of profitable beekeeing. But, in India, we have to evolve our own strains. This work has been taken up at two centres—at the Bee Research Station at Mahabaleshwar by the Bombay Village Industries Board with the assistance of the Commission and at the Agricultural College at Coimbatore with the assistance of the Indian Council of Agricultural Research. This programme is not such as can give immediate results. The work occupies a long time. We want a breed that would be immune from disease, prolific gatherers, free from vices, not given to swarming and can withstand the heat, the rains and the cold of this country.

The matter is not as easy as Shri Tejpal imagines. Shri Tejpal might be having a thorough knowledge of what is going on in Egypt : but I cannot help remarking that he is not aware of what is going on in India. He is wrong in assuming that the Commission has not undertaken a survey of the beekeeping areas. The survey was undertaken as early as 1954. The map showing class I, Class II and Class III areas was prepared in 1955. It is exhibited at all the exhibitions where the Commission is invited to take part. In addition to the areas, the Commission is having a complete idea of how many colonies can be established in them. It will be seen from the map that Saurashtra and Madhya Bharat are among the areas unsuited for the beekeeping industry.

Not Neglected

Since production of honey is not the only object of beekeeping, the Khadi Commission undertakes some work in all representative regions. If the production of honey is 10 lbs. a year in them, I shall say that the results are wonderful. If it is the desire of Shri Tejpal to understand how the labours of the Commission and the money spent by it have been returned, he should go to Madras, Mysore, Kerala and Kashmir States.

He is also wrong in imagining that the Himalayan Regions are neglected by the Commission. Of the 42 area offices thus far established, 11 with 80 substations and 4 model apiaries are in the Himalayan regions. Beekeeping is not among the industries that can show immediate results. Many things should happen and many circumstances should come about before results become visible and the industry settles down. Nevertheless, substantial progress has been made. All India Khadi and Village Industries Board was established in 1953. Beekeeping work commenced in January of 1954. Since then the number of colonies has increased from 8,000 to 70,326 and the production of honey has increased from about 2,25,000 lbs. to over 10,00,000 lbs.

No person who knows anything about beekeeping would believe that a villager keeping only 4 colonies of bees in the Himalayan Regions would produce 2,000 lbs. and earn as many rupees in a year. To say so would amount to misleading the villagers.

Cotton and Honey

Nor are the possibilities of getting the high yields mentioned by Shri Tejpal bright from our Indian Cotton. The secretion of nectar from cotton plants depends on many factors—the locality, the plant, the soil, the season and the atmospheric conditions. The most important is the soil. Rich alluvial soils like the Nile Valley are quite suitable for cotton as a honey plant. But light soil, sandy loams and clay loams, particularly in dry and hot areas, are not so conducive to the flow of the nectar. The subject was studied carefully in America. In Texas, cotton rises to the rank of a great honey plant ; one fifth of its very huge production of honey comes from cotton. Throughout the larger part of the Atlan-

tic and Gulf Coastal plains, cotton does not yield any nectar worth the name. In Louisiana bees do not visit the cotton plants at all ; in the Arkansas river valleys within a close distance of it, the same cotton gives 96 lbs. of honey for the colonies on an average in successful years. In India, we grow cotton mostly on sandy and clay loams and in dry areas with scanty rainfall.

Then, the Egyptian cotton belongs to the order of *gossypium barbadense* which is celebrated for its nectars. Attempts at growing it in India have not been successful so far. Our plants of the improved cotton areas belong to the *gossypium hirsutian* varieties, and in orthodox areas to the *gossipium herbasium* varieties. Neither of them is a good honey plant. The areas where we grow them are even otherwise unsuited for beekping. The flowers of these plants are self-pollinating for the most part and if any little pollination becomes necessary, the insects and the migratory bees which frequent the areas in the season effect it.

Our workers in charge of the work gave very anxious thoughts to this subject. The Rajapalayam area in the Madras State is the only cotton area where a little beekeeping can be undertaken. The Khadi Commission is having intensive beekeeping in it. Many and big enough apiaries have been established there. The results are being watched.

Training Villagers

The Commission's programmes for giving instruction in beekeeping to villagers in their own homes, have given very good results in many of the States where beekeeping has been introduced by the Commission. Only Shri Tejpal does not know about it.

His opinion that there does not exist any diploma course in beekeeping in India is also wrong. We do have such a course. It is conducted by the Bombay Village Industries Board at Mahabaleshwar every year with the grants made by the Commission for the purpose. The course is of 6 months' duration. Experts from many foreign countries who have examined the curriculum, have expressed a high opinion about it.

" PLACE OF CO-OPERATION IN THE SECOND FIVE YEAR PLAN "

By: M. N. NAIK

THE First Five Year Plan accepted the mixed economy as a norm with progressive expanding public sector and assigned an important role to co-operative organisations also. The Planning Commission made it clear that "In a regime of planned development, co-operation is an instrument which while retaining some of the advantages of decentralisation and local initiative, will yet serve willingly and readily the over-all purposes and directions of the Plan". The First Five Year Plan particularly accepted co-operative form of organisation in the field of agricultural credit, marketing, farming, village industries, handicrafts etc.

Subsequent to the formulation of the First Five Year Plan the idea of Welfare State was deemed inadequate and the national leadership set the goal of establishing socialistic pattern of society of which co-operation will be the body and soul of an integral and creative organ of the socialistic society we want to attain. This has influenced the structure of the Second Plan. The following extracts from the draft outline of the Second Five Year Plan will indicate how the

co-operative agency has been recognised as the principal instrument of social policy. "The socialistic pattern of society implies the creation of a large number of decentralised units both in agriculture and industry. These small units can obtain the advantages of scale and organisation mainly by coming together. The character of economic development in India with its emphasis on social change therefore provides a great deal of scope for the organisation of co-operative activity."

"Progressively as we have seen, the State and the co-operative Sector has to enlarge its field of operation."

The Plan sets the limit to the co-operative sector which should primarily confine itself to the activities like agricultural credit, marketing and processing, all aspects of production in rural areas, consumers' co-operative stores, co-operatives of artisans and construction co-operatives. Thus the aim is co-operative rebuilding of the great sectors of peasant and artisan economy.

Co-operative Village management

The Planning Commission indicated in its First Plan Report the lines along which co-operative farming should be encouraged and went on to suggest a broader frame-work of co-operative village management aimed at reconciling the various interests in the rural community including the landless labourers and promoting the development of the entire resources of the village from the point of view of the village community as a whole. The second Plan also sets co-operative village management as the distant goal of reorganisation of the village economy, and reiterates the aim of enlarging the co-operative sector until the management of the entire land in the village becomes the co-operative responsibility of the community.

The plan does not lay any specific targets for co-operative farming but asserts that 'co-operative credit, marketing and processing will also further co-operation in production, and it appears that without resorting to any sort of compulsion the policy would be to encourage and assist small and middle farmers to form co-operative farming societies especially in the case of Government waste lands, reclaimed or not, and the surplus lands obtained by application of ceiling on holdings, as also the fragments smaller than basic holdings. The approach to organisation is therefore completely democratic, and the methods of persuasion and State assistance may be used. Naturally therefore, the transition to co-operative village management will be sufficiently long, during which full scale co-operative farming will be encouraged, the first phase of which may be a great deal of experiments with looser forms in the shape of better farming societies.

Agricultural Credit

The recommendations of Rural Credit Survey have been duly accepted for drawing up the programme of development. The Plan emphasises that every family in a village should be a member of at least one society and that co-operative movement should aim at making every family in a village, credit worthy. The targets are :

1. No. of larger-sized societies....	10,400
2. Short-term credit	Rs. 150 Cr.
3. Medium-term credit	Rs. 50 Cr.
4. Long-term credit	Rs. 25 Cr.
5. Active membership	15 mill.

As can be seen from the above targets co-operative credit will be developed on the basis of state partnership. The Reserve Bank of India has already established the National Agricultural Credit (long-term operations) Fund and National Agricultural Credit (stabilisation) Fund.

Marketing, Processing and Warehousing etc.

The Rural credit survey has made it clear that unless there is co-extensive development of co-operative marketing and processing etc. the development of co-operative credit will not be possible to the desired extent. The Planning Commission has also expressed that credit is only the beginning of co-operation and it should extend to a number of other activities in the village. The development of co-operative marketing cannot be ensured without the wide net-work of warehouses and godowns, that can be useful to agriculturists—sellers and marketing organisations. In the nature of things therefore the principles of state-partnership as well as state-action are intended to be used for warehousing development. The targets of the programme are as follows :—

1.	No. of marketing societies	1800
2.	Sugar factories	35
8.	Cotton gins	48
4.	Other processing societies	118
5.	Warehouses of Central & State Corporations	350
6.	Godowns of marketing societies	1500
7.	,, larger-sized societies	4000

The legislation for the establishment of the All-India Warehousing Corporation and State warehousing companies has been passed. It is proposed to build up storage capacity of 2 to 2.5 million tons. It can be easily noticed that with the effective and adequate State partnership and State assistance, the new marketing societies and processing societies will be in a position to perform a sort of progressive socialistic transformation of the rural business which is inseparable from rural credit. Further the country-wide net-work of State-managed warehouses and co-operative godowns which will cover all the important market centres and villages having strategic value from the view point of marketing, will go a long way in strengthening and supporting the system of crop-loan credit linked with marketing. It will also facilitate the activities of the proposed State Trading Corporation in respect of purchase of important agricultural produce, as well as supply of agricultural requisites and household necessities to the rural areas.

Regulation of markets is also an important item of rationalisation of agricultural economy. It is proposed to bring 500 to 600 agricultural markets under regulation during the Second Plan period.

Trained Personnel

In order to ensure progress in every direction of co-operative development envisaged, the right type of trained and competent personnel will be required. The number of regional training institutes will be increased so as to provide increasing training facilities for co-operative personnel.

Industrial Co-operation

Cottage and small industries are very important from the point of view of creation of employment opportunities, and decentralisation of industry, with the positive object of "raising of living standards and the enlargement of opportunities for all, the promotion of enterprise among the disadvantaged classes and the creation of the sense of partnership among all sections of community." The Second Five Year Plan has laid stress on increasing the supply of consumer goods from the village and small industries, which would be organised more and more on co-operative basis. The outlay for the development is as under :—

1.	Handloom industry	Rs. 66.5	Cr
2.	Khadi & village industries	,, 48.4	,,
3.	Handicrafts	,, 9.0	,,
4.	Sericulture	,, 5.0	,,
5.	Coir-spinning & weaving	,, 1.0	,,
6.	Small-scale industries	,, 55.0	,,
7.	General Schemes	,, 15.0	,,
		Total 199.9	,,

The various devices of common production programme are primarily necessary for the development of village and small-scale industries but they will have

also to be supplemented by common marketing arrangements through co-operative organisations, in which the State may participate. The Planning Commission therefore has accorded a prominent place to co-operative enterprise in all branches of small industry where producers' and supply and marketing societies will have to play their proper role with necessary assistance and collaboration by the state. The small and village industries are expected to gain strength and make appreciable progress with the organisational and financial assistance from the State, helpful and sympathetic attitude of Reserve Bank, State Bank of India and Co-operative Banks and the facilities like rural electrification of 75000 towns and villages and establishment of industrial estates. This opens a wide and fertile field for co-operation to succeed.

Other Schemes and Programmes

In the Second Five Year Plan it is envisaged that community development and National Extension schemes, should pay special attention to the development of co-operatives and village and small industries. Thus the work will involve more concerted action in these aspects.

It is also seen that special emphasis is laid on co-operative enterprise in the development programmes of fisheries, improvement of cattle, marketing of fruits and vegetables, and minor irrigation schemes. It is also contemplated to improve milk supply by establishing 36 milk supply unions, 12 co-operative creameries, seven milk drying plants and milk producers' societies in villages.

Then again the programme of housing which provides for building of 2.2 million dwelling units, will require setting up of many housing co-operative societies for Backward classes, low-income group people, industrial working class and others.

Thus the Second Five Year Plan which tries to take the first step in the direction of achievement of socialistic society through Co-operative Commonwealth, lays down the lines of advance by creating the atmosphere for the development of co-operatives and village industries which are described as body and soul of an integral and creative organ of the socialistic society we want to attain. Co-operation which has virtually failed in the first half century of its existence, as a combination of the weaknesses at the bottom, is being given a fair chance to succeed, with major State partnership as an instrument of attainment of co-operative socialistic society. It has to play its role properly and effectively and fully occupy and enrich its sector which extends from a household to the nation.

Millions of co-operators, official and non-official alike, have to meet this great challenge and rise to the occasion so as to make the programme of co-operative transformation of rural India, that is real India, a successful attempt to render to them and to more millions of their outside bretheren, opportunities for growth and fulfilment, " without distinction between man and man but with the special compassion for the weak and the disadvantaged". They will also be called upon to exercise eternal vigilance which is the price of democracy, so that the expanding fabric of co-operative action does not tend to be regressive—its benefits are reaped by the better-to-do and its burdens fall on the less favoured. The warning of the Planning Commission, given in connection with the First Five Year Plan can more usefully be recited to-day, "It is however not our intention that co-operatives should be bolstered up indefinitely irrespective of their quality or cost of the service they offer ".

SOME REFLECTIONS ON THE SECOND PLAN

By: S. V. RAMAYYA

IT is needless to stress the necessity for planning in under-developed countries. The second plan as formulated had certain basic objectives to be fulfilled, namely (a) a sizable increase in income so as to raise the level of living in the country, (b) rapid industrialisation with particular emphasis on the development of basic and heavy industries, (c) a large expansion of employment opportunities and (d) reduction of inequalities in income and wealth and a more even distribution of economic power. Laudable as these objectives are, unfortunately they are based on certain assumptions which are found to be not realisable. No wonder the plan within two years of its progress had to face unexpected strains and stresses, awakening us to the need to rethinking and reassessing the resources and the plan.

Planning in India, has to be worked within certain limitations as the base of the plan is democratic and this democratic approach assumes certain standards of voluntary sacrifice and suffering, as well as cooperation from the people. To the extent these above are forthcoming the progress of the plan is rapid or slow. Naturally the plan has to be remodelled to suit the changing needs and requirements of our country. Necessarily our approach to these problems could not be dogmatic or rigid.

The plan proposes to raise the National Income by 25% during the plan period. What was responsible for this estimate, was the unexpectedly great success of the first plan in raising the industrial production and agricultural production above the targets laid down. Because of the tremendous increases in the agricultural production, the planners did not attach equal importance to this significant sector, not realising at that time that the success was due no less to natural factors as to the measures of the plan. No wonder, as soon as the natural factors became stabilised, the scarcities in food and raw materials raised their heads culminating in the creation of an unexpected situation. Not only are we facing shortages in food and other raw materials necessary for our growing economy, the distressing factor has been the rise in the price levels of these basic commodities. This rise in the price level of food especially tended to create rises in the price levels of other consumer, manufacturing goods and wages upsetting to a certain extent calculations of the Planners with regard to the financial resources.

The Plan has envisaged to spend Rs. 4800 crores in the public sector. Out of this the resources to be raised externally have been placed at Rs. 800 crores i. e. this amount is necessary for us in the form of foreign exchanges to meet the import requirements of heavy and other industries. But this assessment of the needs of foreign exchange has been under-estimated. It has been later found that we require about Rs. 1800 crores of foreign exchange for several reasons, some of them quite unexpected. The prices in some of the industrially advanced countries had risen which have led us to pay more for the same quantity of goods and commodities. We had to import about 3 million tons of food grains every year for which we had to pay, though to a great extent we are relieved of the burden because of U. S. A's payment in terms of P. L. 480. We had to spend much more for our defence requirements. The closure of the Suez

Canal had added to the costs of imports. The imports in 1956-57 had reached the total of Rs. 1100 crores representing an increase of Rs. 325 crores over the previous year and Rs. 200 crores over the average annual imports anticipated for the plan period. Our foreign exchange earnings have not increased because of recession in U.S.A. (The demand for manganese has fallen greatly). All these factors led to a gap of Rs. 1800 crores of foreign exchange. Under the above circumstances the Planning Commission is compelled to cut down the physical targets and is implementing the core of the plan viz., steel plants, railways, roads. The over all financial outlay, in view of the shortage of both internal and external resources has been reduced from Rs. 4800 crores to Rs. 4500 crores. But even this amount may not be available. According to the recent appraisal made by the Planning Commission, the total resources available for the implementation of the plan will be Rs. 4220 crores—domestic resources 2028 crores, external assistance Rs. 1100 crores and deficit financing Rs. 1092 crores. During the first three years of the second plan, the plan expenditure is computed at Rs. 2466 crores—in 1956-57 Rs. 639 crores, second year Rs. 846 crores and third year Rs. 981 crores (and now for the fourth year it is put at Rs. 1050 crores allowing for a short fall of Rs. 50 crores).

Because of the above difficulties, can we be pessimistic about the future of the plan? These difficulties are difficulties of growth and our economy has to overcome them if we want to build a stable and prosperous India. Recently the picture of foreign exchange resources has been brightened. The World Bank has taken the initiative of summoning countries of U.S.A., Britain, Canada, Japan and Germany to devise ways and means of helping our developing economy and it is now certain that we may get the necessary foreign exchange resources to fill the gap. The World Bank team after paying a tribute to our impressive achievements cautions about the size of the third plan and stresses the necessity for stabilising the progress so far achieved. It remarks, "Plans for future development must be based on a realistic assessment of the resources likely to be available, particularly foreign exchange. Careful estimates are required of the cost of each major project before a balanced investment programme can be worked out and it was time that detailed thought was given to the possible shape of the third five year plan. A considerable proportion of available resources in the early years of the third five year plan will have to be ear-marked for the completion of the projects carried over from the second plan, and no commitments should be made for new projects involving substantial foreign exchange expenditures until there is reasonable assurance that the country will be able to afford them." Much as we agree with some of the above comments of the Team, it is unthinkable for us not to commit ourselves to new projects knowing fully well the grinding poverty of India.

We hold that the highest priority should be accorded to the development of agriculture, for that is the base on which the entire structure of the plan depends. "This is the sector of the economy, where there are the greatest opportunities to raise output with a minimum investment of foreign exchange." So far the outlook for increases in agriculture production has not been encouraging though we have received reports of bumper crops in some of the states like Orissa, Andhra Pradesh, U. P. This year the rice production is estimated at 29 million tons which is a record for so many years (Total grain production is put at

58 million tons including wheat) but this would not solve our food problem. Our agriculture continues to be the draw-back of the plan as there seems to be some confusion over land reforms and cooperative farming. It is amazing to know that the communist China has achieved a target of 390 to 400 million tons of grain this year (New China Agency report) by the help of intensive cultivation, rich manuring, cooperative farming (collectivist farming) etc. The production figures of these two countries of grain indicate to us what lee-way we have to make even to achieve a reasonable target. The advances that have been made in agricultural field in China are really startling. To quote P. Thomas Balogh "The basic principle behind the Chinese industrial and agricultural revolution is very simple. It is the direct mobilisation of idle or unemployed man-power for investment mainly in transport and agriculture, without initially an increase in consumption. No democratic or totalitarian government has in the past found a way to exploit effectively the large peasant under employment. Something of this type seems to have happened in China with extraordinary results. It seems scores of millions of people have been mobilised for various works. The irrigated acreage has apparently been extended by something over 20 million hectares; the increase in the use of fertilisers seems remarkable. The increase in food production represents something of the order of magnitude achieved by India during the whole of the first plan period."

In view of the progress achieved by a neighbouring country, we cannot be oblivious of progress of our own agricultural production. Unfortunately in our country, certain sections of the people seem to take advantage of shortages in food production by raising their prices abnormally. Unless the individual's regard for decent standards of behaviour is increased the benefit to the country cannot be realised. In view of the unsocial activities practised by some people, the National Development Council is compelled to suggest taking over wholesale and retail trade in food by the Government.

In another aspect also the Second Plan has not fulfilled the expectations. It was estimated that the plan would provide employment opportunities to 8 million people. But so far only 2½ million have been employed and it is reported that the number of unemployed people at the exchanges has been recording tremendous increases. This is again a serious problem, which if not solved satisfactorily, would give rise to many other social evils. The reason for perceptible fall in the employment potential is due to the planners having allowed a large share of this quota to be filled up by the private sector. There does not seem to have been much appreciation of the roles assigned to cottage and village industries and heavy industries, and rationalisation of industries from the employment aspect. At most from the present trends, not more than 4 million people may be employed during the entire plan period. In China reports have come in of tremendous increases in industrial output and in employment. "Coal production rose from some 63 million tons to 130 million tons in 1957. (This alone is double of the target of the second plan for India). In 1958 it is said to have risen to about 200 million tons. In 1959 it is planned to exceed 300 millions. Steel production is expected to jump from 5.3 million tons in 1957 to over 10 million tons. Machine tool output has increased in the same proportion". Millions of peasants and workers seem to have been working on land and in factories. Of course, we agree that these comparisons would not be helpful because of differing

techniques adopted in both countries. But there is no doubt our production figures have fallen short of the physical estimates.

There have been some delays in the execution of some of our projects especially steel. The estimates of the three steel plants have gone very high from about Rs. 350 crores to about Rs. 439 crores plus another 120 crores for ancillaries like townships, development of quarries, sources of water power supply. Here the experience of China is exhilarating. The Chinese Government had set up small plants in different parts of the country at comparatively low cost, producing at each centre about 30000 tons of iron and steel. This had led not only to several increases in production but created among the people industrial consciousness. To examine this aspect our Government is proposing to send study teams to China.

Further our foreign exchange earnings have decreased because of a fall in the value of exports of various goods (cloth for example) partly because of competition from China, Japan and West Germany and partly because of our own rigid cost structure. This must be an eye opener to us that we cannot rely for ever on our traditional commodities and markets but must try to tap new markets and new sources, altering our own factories' cost structure so as to enable us to compete with other countries at reasonable levels. Mr. Lal Bahadur Sastri recently announced the Government's decision to allow import of about 95000 bales of cotton staple from the U. S. A. under P. L. 480 programme to boost up our textile exports besides taking steps to modernise machines and supplying adequate amounts of chemicals and dyes.

Our sterling balances touched Rs. 178.53 crores in the last week of October 1958. Since then these have started rising up and the latest official figure available is Rs. 183.02 crores. The weekly withdrawal which was formerly Rs. 15 crores has now come down to Rs. 0.83 crores because of the severe restrictions on imports and the assistance rendered by friendly governments. But mere concentration on exports alone may lead to the shortages at home front especially of ground-nut, tea etc. The remedy lies in increasing internal production.

There has been recently international fall in the prices of the goods of the primary producing countries resulting in the securing of less foreign exchange resources by under-developed countries. The 13th session of the General Agreement on Tariffs and Trade (GATT) seems to appreciate the problems facing these countries. It has been estimated that an increase of 5 percent in the prices of primary products would be sufficient to offset the foreign aid that the under-developed countries have been receiving. Similarly it has been realised that under a series of bilateral negotiations, advanced countries should gradually reduce tariff, so as to admit more of the manufactured goods from the under-developed countries. But these proposals require international cooperation.

The shortages in the raising of resources internally have been felt in spite of the imposition of new taxes like expenditure tax, wealth tax, gifts tax, etc. The State Governments have to gear up their resources to meet newer demands by imposing betterment levies, water rates, reassessment of agricultural land and other imposts. The National Development Council has cast upon the states the responsibility of raising between Rs. 25 crores to Rs. 30 crores through taxation in the next financial year 1959-60, as compared with

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SOME REFLECTIONS ON THE SECOND PLAN

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Rs. 5.5 crores which they said was their maximum capacity in this direction. Space does not permit us to discuss all these measures in detail. Tapping the gold hoardings in the country for the plan (the estimates vary from Rs. 1750 crores to Rs. 3000 crores) have been mooted. The experience in France is anything but encouraging. How in a country like ours, where gold which is the last asset of the person to fall back in time of emergency, can be mobilised is a matter worth studying carefully. To pin high expectations on this source would only land us in disappointment. However, greater determination and efforts are needed to raise internal resources not only for the second plan but also successive plans to come.

There seems to have been some complacency among the people that somehow the targets would be achieved and planning does not involve much sacrifice. It would be needless to mention how mistaken would be such an idea. Even though our physical targets have been lessened in view of the rise in prices and changes in the availability of resources, we cannot adopt an attitude of pessimism and feel perturbed over what is happening. What is needed is the awakening of the people, to gear them to greater effort and to make them meet the challenge with greater courage, fortitude and wisdom. We plead for a change in the attitude of the people, for a spirit of intolerance against unsocial practices and corruption and appeal to them to work on the basis of moral values. Even to allow us to carry the plan smoothly we require adherence to basic values of life. We also plead that for carrying on the rest of the second plan and to formulate third plan substantial assistance from friendly countries would be of great value to us.

Mr. Per Jacobsson, the Managing Director of the I. M. F. has stated that foreign loans and investment would depend upon the credit worthiness of the countries. That implies that the loans that we borrow must be put to productive uses and we must realise from these investments optimum output so that the lenders would be sure of our capacity for repayments. This is a worthwhile caution for us but at first sufficient investment and economic aid must be forthcoming. Rightly did Justice Chagla say to the American public, "Economic aid to India is your contribution to the democratic cause". We cannot conclude better than quoting the Colombo Plan conference declaration at "Seattle" that "the economic development of the less–developed areas is a major challenge of our times. The peaceful evolution of world civilisation requires that this challenge be met".

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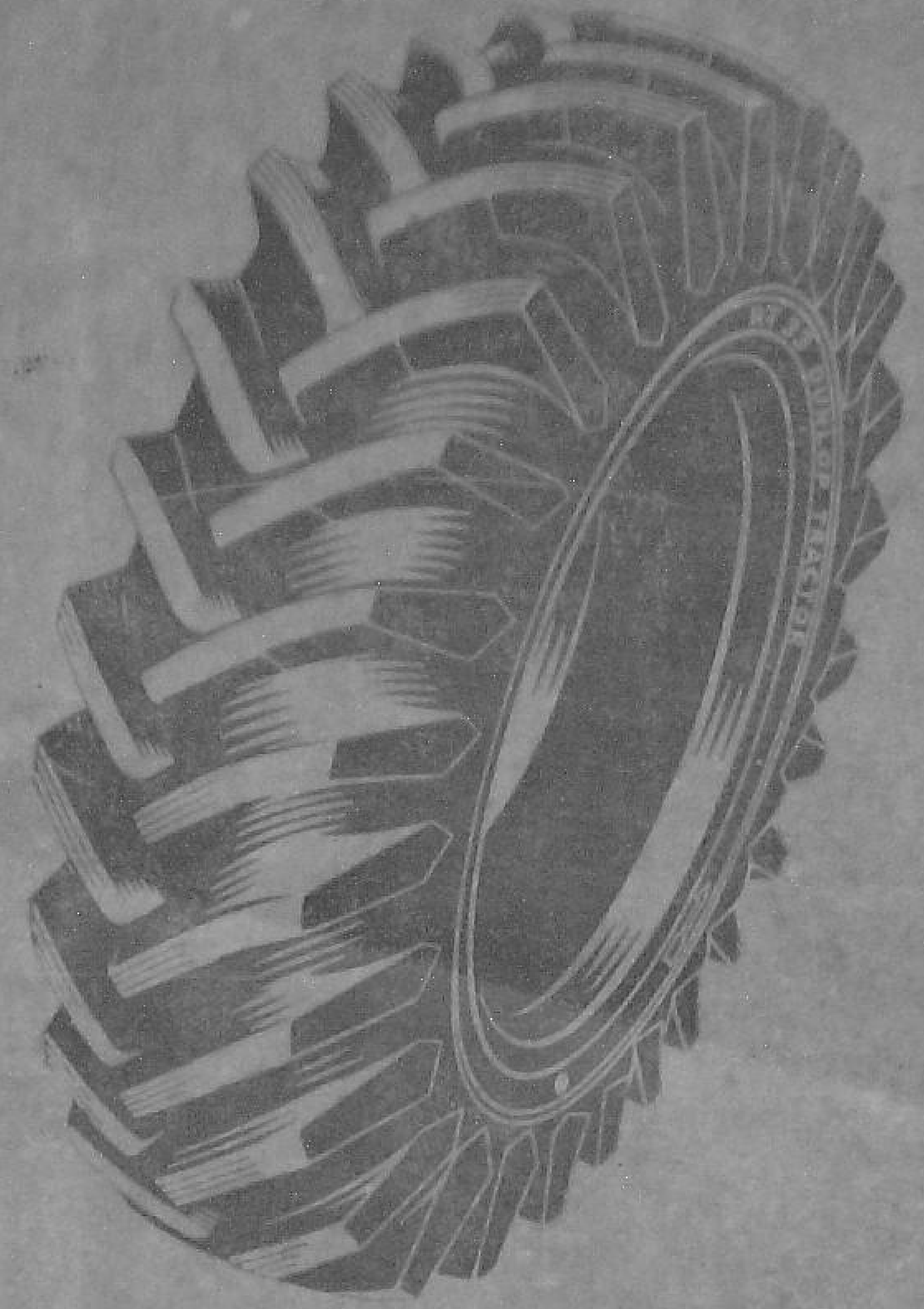

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